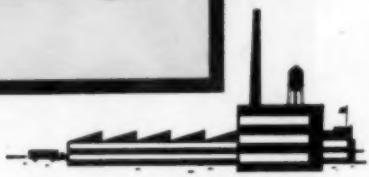
FEBRUARY, 1961

Industrial FINISHING



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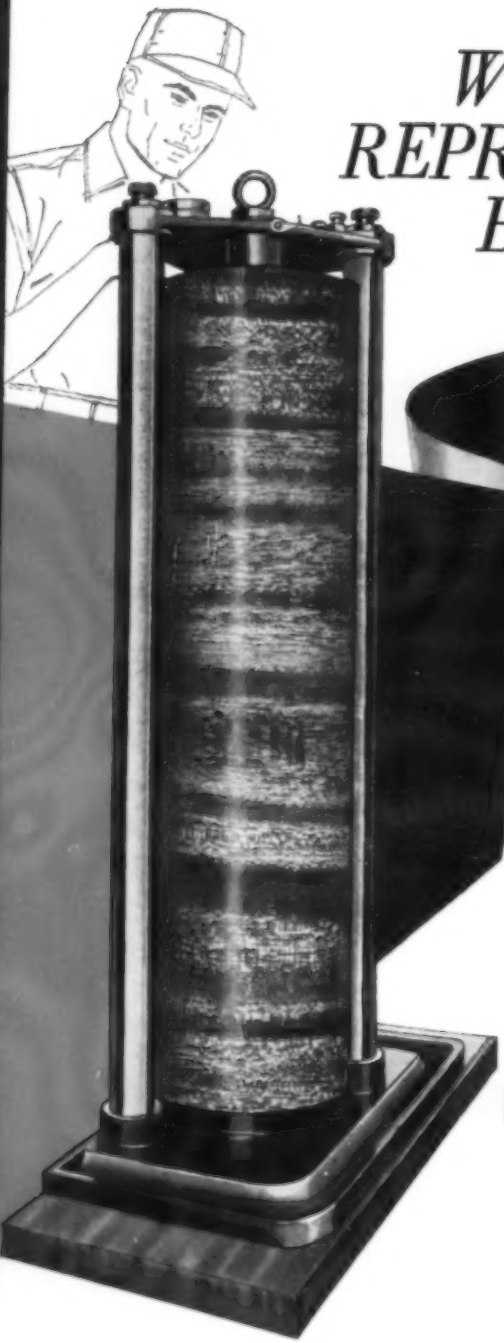
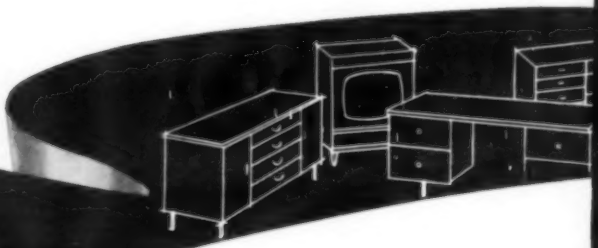
For **37** *Years The Leading Publication Serving The Finishing Industry*



WOOD REPRODUCTIONS BY THE MILE



You name it! Steel, low cost woods, composition board, plastics, in fact, almost any substrate takes on the warmth and richness of beautiful wood grains, leather, fabrics, mother-of-pearl or an exciting pattern of your own creation when finished by the Polyfax* Process.

Every day across the nation major manufacturers are turning out miles of high fidelity reproductions using IC* Polyfax precision engravings, groundcoats, inks and clears—a complete system each component of which is engineered to work perfectly with the others to produce that sharpness of detail that makes a Polyfax reproduction stand out above all others.

Want to "dress-up" your product? Write today for IC Polyfax Bulletin, "The Key to Distinctive Styling."

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Finishes Division

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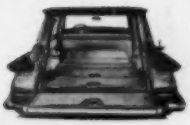
ARMORSOL®. A WORKABLE, ABRASION RESISTANT VINYL FINISH FOR THE PRICE OF BAKED ENAMEL



Here is a modified vinyl dispersion coating which combines the workability of vinyl enamels with the abrasion resistance of vinyl resins. ARMORSOL has been used for automotive and aircraft applications, business machines, electronic, office and control equipment, thermosetting plastic parts and metal furniture.

It offers you these advantages:

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a valued customer:

*"The hand rubbed Guardsman® finish makes this HIBRITEN French Provincial just right for me"**

Authentic French Provincial styling of this Hibriten bedroom suite is enhanced by the rich loveliness of its gray brown Guardsman® hand rubbed finish. Our studio developed this unusual finish utilizing hand padding, for mellow pore contrast. This greatly enhances the original beauty of the butternut veneers and solid elm and blends with the highlighting of the antiqued hardware. It is such attention to detail, that makes for salability on the retail floor and continuing satisfaction in the home.

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Grand Rapids, Michigan — High Point, North Carolina

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Makers of the famous Guardsman® Cleaning Polish

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Industrial FINISHING

W. H. ROHR, *Editor* P. C. BARDIN, *Field Editor*

February, 1961
Vol. XXXVII, No. 4

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

★

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West Coast Editor
CHAS. R. BROWN

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

37 **THIRTY-SEVENTH YEAR OF PUBLICATION**

Random Comment

Mobile Homes; Aluminum. A record breaking 36½ million pounds of aluminum will be used in 1961 to make mobile homes, Neil Zundel, director of transportation markets for Reynolds Metals Co., said recently. Mr. Zundel estimates that 90% of the 120,000 mobile homes expected to be built this year will use aluminum as the major construction material. Significantly, 24 million pounds will be pre-enameled aluminum sheet.

* * *

Mobile Tool Cabinet. A new mobile tool cabinet has been developed by Huot Mfg. Co., 500 N. Wheeler Ave., St. Paul 4, Minn. Solidly built of reinforced 18-gauge steel, the new cabinet is well suited to use in industrial plants. Oversize rails are used for all drawers, which are supported on each side by two heavy compound slides. Free-sliding, even when heavily loaded, the drawers are well-designed to protect quality tools while keeping them instantly available for use. The cabinet is formed and welded into a streamlined unit of modern beauty and efficiency.

A portable work bench and tool cabinet.

* * *

Protects Finger Tips. Guard-Tex is a self-sticking tape for covering finger tips and wrists to protect them from sparks, cuts and puncture wounds during various handling and production operations. Burrs on rough metal stock often are to blame for injuries to unprotected hands and fingers.

This new flexible mesh tape will not leave a sticky residue nor leave color stains or prints on any material handled.

* * *

Unusual Fire Hazards. Under present day technology, unusual fire hazards are constantly appearing in industry, involving the use of fuels which defy or resist extinguishment by customary fire extinguishing agents.

If a company or industry has such a problem, one place it can go to obtain a solution is the Research &

From the start – Consider the FINISH!

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Development Division of a small Wisconsin chemical company, whose engineers have helped produce solutions for many of the important fire extinguishing problems encountered by industry and government during the past ten years. The company is the Ansul Chemical Co. of Marinette, Wisconsin.

* * *

Royal Color and Styling. "Regal" is the word for the furniture trend today, both in color and styling, according to manufacturers at the American Furniture Market, Chicago.

The royal trend is borne out by lavish use of purple and gold, official royal colors, and a return to the elegance of traditional settings.

"Palest heliotrope through amethyst to royal purple" is the regal colorscope forecast by the Lamp & Shade Institute of America. "Our designer made a study of new trends in furniture and carpets so that we could key our new line of lamps with new colors and styles," said Aaron Kosser, President of Phil-Mar Lamp Corp., Cleveland, Ohio. "He found that lilacs and purples, complemented by soft greens, were favored colors, and that traditional furniture, with its feeling of elegance, will be a favorite. Gold and white lamps will make effective accents to regal settings."

* * *

Silicone Rubber Spray in an aerosol can offers a new, fast, economical method for applying RTV-60 Silicone Rubber. Spraying Room Temperature Vulcanizing Silicone rubber from aerosol spray cans is another product innovation designed by General Electric for the user's convenience. The spray can will allow the right amount of RT V silicone rubber to be put where it is needed with greater savings in materials and time.

Structural Aluminum Panels, which are claimed to be very strong, are announced by Reynolds Metals Co. Designated "Reynocore," each panel is a "sandwich" of two flat sheets of aluminum bonded by "Reynoweld" to a core of either corrugated or delta-formed aluminum sheet.

The new panels are available in either delta-core or corrugated core and in a variety of finishes and colors.

The new structural panels, on which patents are pending, are expected to speed up and simplify construction of many types of buildings.

* * *

Coating for Hopper Cars. A coating made of polysulfide liquid polymer and epoxy resin has solved a major maintenance problem for fertilizer and chemical-carrying railroad hopper cars. The coating not only provides protection against corrosion for the steel cars, but also withstands the abrasive action of dry chemical and fertilizers. Such coatings have about ten times the life of previously used coatings.—The Thiokol Chemical Corp., Trenton, New Jersey.

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Now, get all the advantages of solvent-based enamels without the danger of fire in the formulating process or baking room. Water-soluble Melaqua® 600 melamine-acrylic resin is non-inflammable, yet delivers high gloss . . . hard finish . . . resistance to weather and heat. Melamine resin makes Melaqua 600 hard and solvent-resistant. Acrylic polymer produces smoother films and cleaner, brighter colors. Write for information about Melaqua 600, the first of a wholly new family of water-dispersed thermosetting industrial coating resins.

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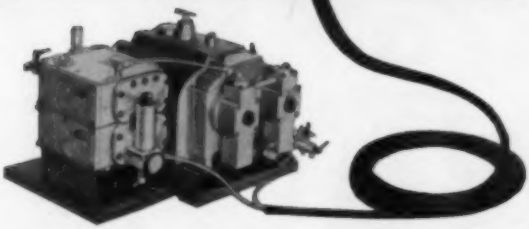

Versa-Gun used with Nordson AP 15000 Unit. The most advanced Airless Spray System available.

NORDSON · ORIGINATORS OF THE AIRLESS SPRAY SYSTEM

"We are proud to announce a new breakthrough in Airless Spraying"

Eric Nord, President, Nordson Corporation

The effectiveness of any spray paint system depends largely on the efficiency of the spray gun. In the past, spray guns available were a bottleneck to maximum efficiency. That's why our new Versa-Gun is a vital breakthrough in the field. This new gun:

- **Is spit-free** because of improved design in the area between the valve and tip; because it opens faster – closes faster than other guns.
- **Small in size** – easy to get into difficult, hard to paint spots.
- **Light in weight** – only 16 ounces.
- **Easy trigger pull** – only 4.7 pounds at 500 PSI.
- **Excellent balance** – this added to size, weight, and trigger pull advantages result in better "handling;" thus reducing operator fatigue.
- **Improved atomizing characteristics** – this helps solve the problems of tailing and extends the operational range of the gun.

The Versa-Gun, as this name implies, is the most versatile spray gun ever developed for the Airless System. It may be used with heated or room temperature material, with circulating or dead-end systems. The Versa-Gun brings new effectiveness and economy to the entire range of airless spraying. We would like to show you how this new gun and the Nordson Airless System can go to work for you – save you money and help you do a better job.

Write for free copy of folder N-500 today. **NORDSON CORPORATION, 55 JACKSON STREET, AMHERST, OHIO.**

Feed lines to Versa-Gun may be brought in any of the ways shown above. One is most effective in each spray station.

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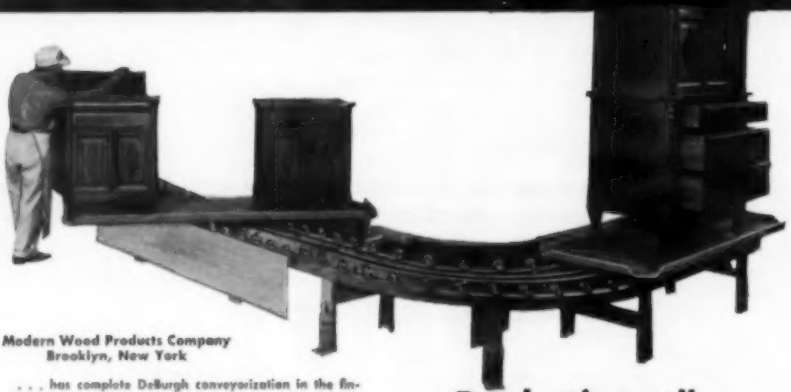
DE BURGH CONVEYORIZED FINISHING SYSTEMS



Modern Wood Products Company
Brooklyn, New York

. . . has complete DeBurgh conveyorization in the finishing department, demonstrating how continued work areas can be utilized to full furniture production.

Production rolls through tight areas to meet tight schedules

Convenient take-up adjustments are provided and conveyor speed is easily varied.

Pallets may be rotated freely along the line and are automatically aligned for certain finishing operations.

FLEXIBLE
DeBurgh Systems will fit the most complex floor layout. Conveyor speed is easily controlled.

CUT LABOR COSTS 50%
Patented features of the DeBurgh System allow fewer employees to do more work in less time.

35% LESS FLOOR SPACE
The "close pack" and "cycle system" features permit double use of floor area.

INCREASE PRODUCTION
No time lost between operations. Labor force is kept productively occupied.

LESS FATIGUE FOR LABOR
Production is delivered to the workman at proper height and position on a firm, rotatable platform . . . no pulling, no lifting, no shoving.

ECONOMICAL
Investment in a DeBurgh System can be amortized in 10-15 months . . . can be installed or altered by your own maintenance crew.

Small plants and large industries alike use the distinct advantages of the DeBurgh Conveyor to increase their production and their profit. DeBurgh Systems will handle many types of products at one time . . . a fully powered system it negotiates horizontal and vertical curves with ease. It speeds up or slows down easily. There are no dead areas along the line. The DeBurgh System is working for you all the time. And it works for your workers, too!

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Without obligation, our engineers will make an expert appraisal of your finishing system requirements.

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R/V

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time to duck

Splash! Looks good compared with *our* weather, doesn't it? You can look good, too, if you will dive into your finishing problems and let *us* come up with the answers. Our experienced plant/laboratory team is poised to produce whatever you need in the line of R/V "Real Value" Industrial Finishes. Don't duck this wonderful chance; join the swim of successful manufacturers . . .

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United's "HAMMERMARK" makes wrinkle finishes and hammered tones old fashioned. It has beauty as well as the function of hiding imperfections. HAMMERMARK is impervious to duplicating inks, cleaning and office chemicals... and is "mar-proof". Available in bake or air-dry... for wood, *all* metals and other strata...

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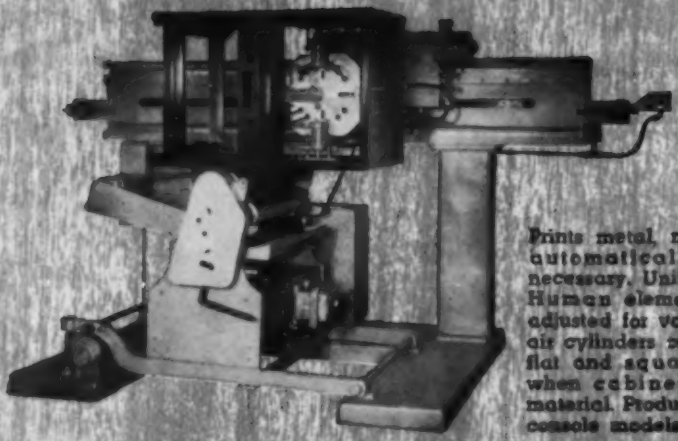

Prints metal, masonite or wood cabinets automatically. No jigs, no fixtures necessary. Uniform printing, no misprints. Human element eliminated. Quickly adjusted for various sizes. Cabinet held by air cylinders on inside, assuring a perfect, flat and square printing surface even when cabinets are made of thinnest material. Production-2 per minute on large, console models.

Wood

This machine is built in various sizes from the narrowest up to 36" wide, for the graining of various sizes and thicknesses of panels, tables and similar work. Can also be used for edge graining. Explosion-proof motor is mounted beneath a solid base, eliminating fire hazards.

This trademark SCHMUTZ recognized as builders of fine printing machinery since 1923.

This trademark is known not only in this country, but throughout the world for modern and highest quality printing machinery. Now manufacturing more than 60 different types and models.

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LOUISVILLE 3, KY.
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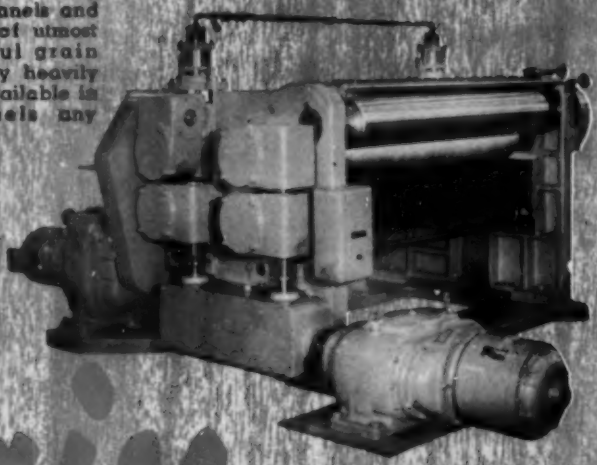
Reverse Roll Coater for eliminating imperfections in hardboard panels and other sheet material, which is of utmost importance in securing beautiful grain effects. These machines are very heavily and accurately built and are available in two sizes for 36" and 48" panels any length and up to 2" thick.



Grain

REPRODUCING EQUIPMENT

This large, heavy duty machine has been especially designed for printing unusually beautiful grain effects on large panels. Panels are automatically fed through the machine so that perfect registration of design can be had. Machine carries two sizes of engraved cylinders: 10" diameter for straight grain and 20" diameter where design of wood is such that repeating is objectionable. Standard size machines will handle panels 36", 48" and 64" wide, up to 12' long and from the thinnest to 2" thick.

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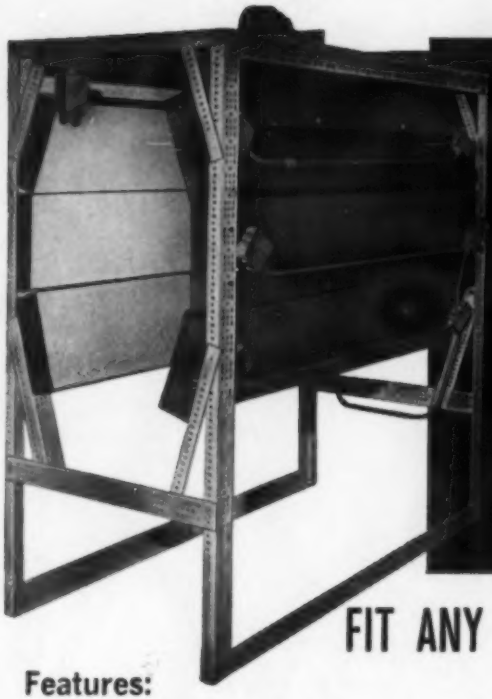

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FIT ANY FINISHING SYSTEM

Features:

Uniform Heat . . . no hot spots; ceramic face emits even heat.

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Now you can get infra red ovens tailored to suit your *special* finishing system at *standard* prices. In addition, RediRay's uniform, no-hot-spot heating . . . high efficiency . . . and low maintenance puts the profit dollars into *your* pocket. Free your finishing operation from costly, inefficient "fixed dimension" heating. Write us about your heating requirements. See how RediRay can save *you* money, too.

Free! Your copy of Engineering Data Sheet No. 112 describing RediRay and its applications.

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For further information on what manufacturers have to offer —literature, products, supplies, etc., mentioned in the editorial departments, use the "Reader Service" return card in the rear section of this issue, page 120.

Industrial FINISHING

February, 1961, Issue

Reader Service Department

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INDUSTRIAL FINISHING Magazine for information about technical paint coating problems, methods and processes; and for sources of supply for organic finishes, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying, and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

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— DRESS UP WITH QUALITY —

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Barrett Varnish Company

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a complete line of dependable industrial finishes since 1870

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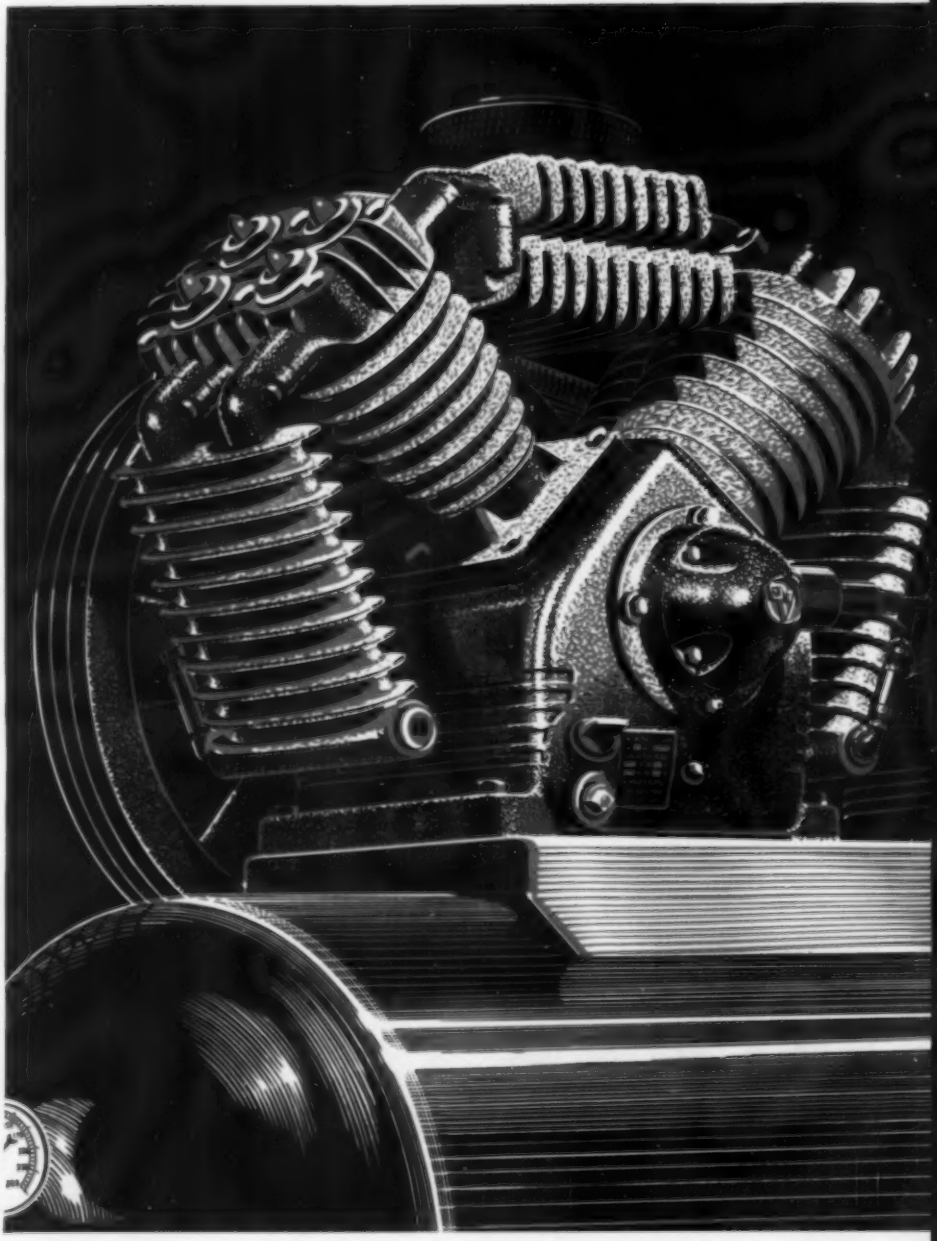

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with fewer starts and stops

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Here's a spray process that gives your product an economical but *superior* and uniform finish! Gyromat's centrifugal spray system, combined with an electrostatic field, gives you maximum material efficiencies, gets into recesses that give other electrostatic sprays real trouble, and permits "wrap around" spraying, too!

The head directs a controllable atomized tangential fan that blends out at each end — gives perfect "match-in" on large areas when a multiple-head set-up is used. Heads are easy to adjust to produce the directional fan you want — from 0° to 360° — and can be positioned and sprayed in any attitude!

The process puts virtually *all* your coating material on your product — uniformly, safely, and at high speed!

An "Automatic Flush and Change-Over System" gives you controlled push-button clean-up and/or color change — often in less than two minutes. Some models include an automatic "skip spray" feature that eliminates the need for bunching conveyors or running a full load.

High velocity exhaust systems are unnecessary, so the Gyromat not only saves coating material, but reduces heat loss, clean-up time, and fire hazard, too!

The Gyromat process gives you out-standing material efficiency and coverage...a perfect sales-building finish. And it can be adapted to meet any electrostatic spraying requirement. The Gyromat pays for itself — over and over — in savings, increased production, and customer satisfaction!

FOR COMPLETE DETAILS WRITE TODAY!

THE GYROMAT CORPORATION KINGS HIGHWAY CUT-OFF FAIRFIELD, CONNECTICUT

For more data, circle 164 on colored card.

Conveyor Lubrication

WHETHER or not you run your overhead conveyor through a stripper tank on each cycle, the conveyor still requires regular lubrication. Finishing conveyors generally pass through dry-off and bake ovens, not to mention spray washer and phosphatizing machines. All of this "treatment" tends to dry out or remove the oil. Properly lubricated equipment gives more efficient service and lasts longer.

Automatic lubricators are available for the moving parts of conveyors. They are designed to deliver just the right amount of oil to lubricate the equipment without causing any excess oil to drip on parts before or after finishing. Even sprocket wheels inside ovens and at high or inaccessible locations can be oiled outside the oven and at convenient floor level stations. These controlled lubricating devices are economical.—*P. C. B.*

The unforseen obstacles—the bad breaks—give the creative person an opportunity to display flexibility.

Automatically Controlled Paint Viscosity

DID YOU know that equipment is available for maintaining pre-established paint viscosity automatically? Control equipment such as this is especially useful in flow coating, roller coating and dip coating operations. It provides accurate control, removes the possibility of errors through human failure, helps to improve the uniformity of the applied coating, increases operating efficiency and eliminates useless waste.

In case you require permanent performance records, recording devices are available that will accurately show the actual paint viscosity on a 24-hour basis. There is no substitute for knowing the truth about your painting or coating operations.

Ross Engineering Moves Its Seattle Office

The Seattle office of J. O. Ross Engineering, a Division of Midland-Ross Corp., recently moved into larger quarters.

Formerly at 823 Skinner Bldg., the Ross office is now located at 2909 Third Ave., Seattle 1, Washington.

Paul Goldner is the Seattle District Sals Manager of Ross Engineering, manufacturer of air processing equipment in a variety of industries.

AIR SPRAY WITH NO OVERSPRAY LOSS

GYROMAT LIQUID SEAL AIR-SPRAY PUTS 99% OF YOUR COATING MATERIAL ON YOUR PRODUCT

Here's an air-spray process that *eliminates material losses!* Now, if air-spraying is the best way to coat your product, there's no need to substitute less effective methods to reduce waste. The Gyromat Liquid Seal Air-Spray process automatically collects the over-spray and re-uses it!

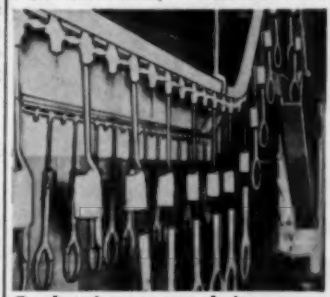
This unique process offers tremendous savings in other ways, too: it requires no exhaust system . . . eliminates heat loss, excessive house-keeping, dust "drag-in", and general fire hazard. There's no dry build-up in the chamber; just a wet film that can be cleaned up in minutes.

The process gives you *stable* air gun performance. There's no drying-out . . . no "down time" for cleaning guns. Air is partially saturated with solvent, and the movement of dry air into the chamber is minimized. (Guns may need occasional cleaning when spraying unusually heavy materials.)

The process is versatile . . . adaptable to any product for which air-spraying is the best method. You can add or remove guns in a matter of seconds to meet production needs. You can use the process as a "hot spray" system, in many cases, or as a safe, solvent-saving flow-coater. And the spray chamber can be designed to accommodate any type of conveyor.

The Liquid Seal Process offers terrific savings in time and materials . . . and will give your product the finest air-sprayed finish possible!

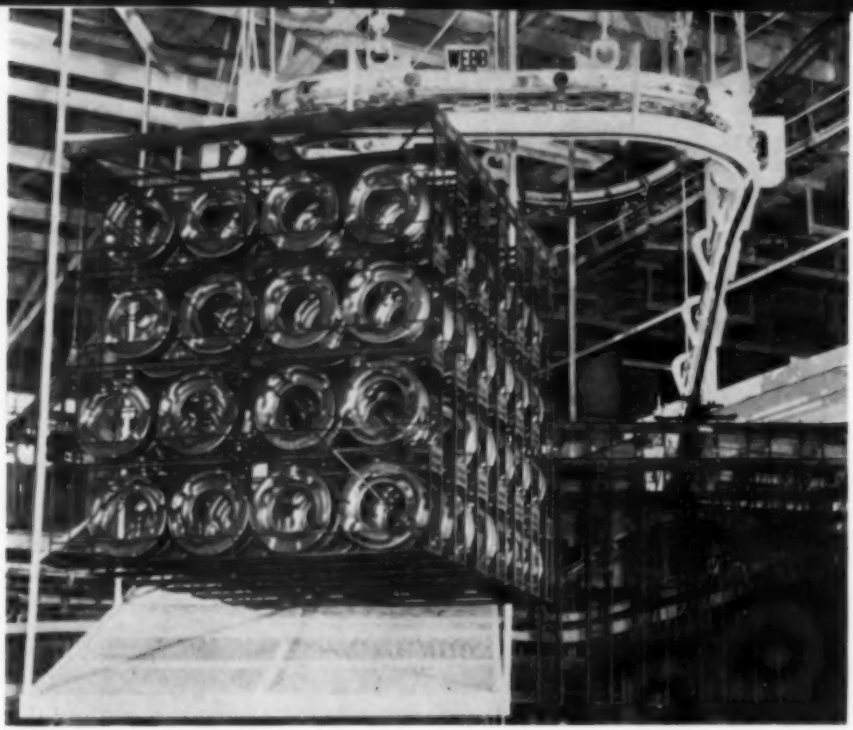
FOR DETAILS, WRITE TODAY!



Racket frames on their way to the spray chamber for "no loss" painting by the Gyromat Liquid Seal Process.

THE GYROMAT CORPORATION KINGS HIGHWAY CUT-OFF FAIRFIELD, CONNECTICUT

For more data, circle 165 on colored card.



Circular steel stampings, nested in large racks, move along under overhead chain conveyor.

Processing and Painting

AC AIR CLEANERS

By Herbert Chase, M.E.

AUTOMOBILE engine air cleaners, in many designs and sizes, are manufactured in a new building recently added to the huge AC Spark Plug Division plant in Flint, Mich. Except for the filtering elements, the components for these air filters are mostly stampings made in various gauges of sheet steel.

Usually an automobile-engine air cleaner is mounted above or close to the engine where temperatures are high and where other condi-

tions tend to promote corrosion. Heat resistant, corrosion resistant finishes are needed on all surfaces, and these coatings must be uniform in thickness and appearance; they must be applied economically and in such a way that they will adhere firmly to the steel.

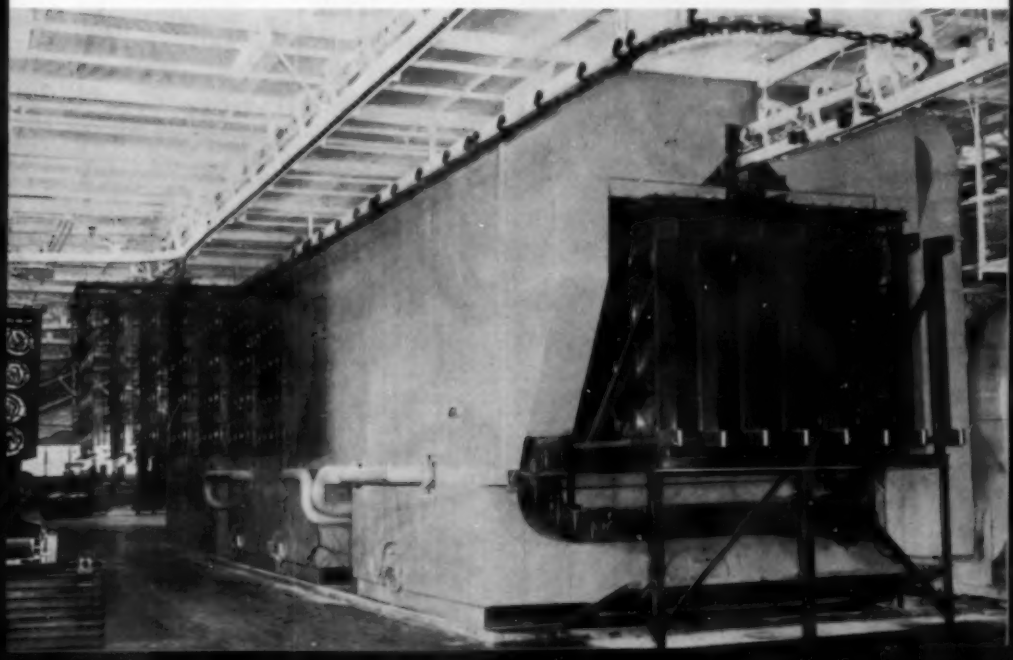
Cleaning and Phosphatizing Before Painting

Steel surfaces are thoroughly cleaned in a 2-stage spray setup; then they are sprayed with a heated phosphate solution that not only promotes corrosion resistance but provides a slightly etched surface to which the paint will adhere firmly. Phosphatizing is followed by hot rinsing and then by drying in an oven before the protective finish is applied by automatic spraying or hand spraying. Most of the spray painting is done electrostatically — to minimize overspray losses, to promote uniform coverage and production economy.

Many stampings are moved from presses directly to the cleaning and painting operations, but a goodly portion first goes through one or more partial or complete assembly operations. In all cases management's objective is to minimize handling and still see that the parts or assemblies reach cleaning and subsequent operations in such a way that all surfaces will receive uniform treatment. This requires

Includes cleaning, phosphatizing, rinsing, drying, electrostatic painting and baking to produce a durable, heat resistant and corrosion resistant finish.

Racks of components enter the cleaning-phosphatizing tunnel for the surface treatment.



the use of racks or hooks for most large parts and assemblies. For smaller parts, conveying is done by wire mesh belts or containers that will insure similar results in all stages of the cleaning and finishing system.

Three Kinds of Conveyors Are Used to Move Parts

Nearly all of the operations require the use of tunnels or sheet metal enclosures. Conveyors advance the work at suitable rates and deliver the air filter components to assembly points if they are not already completely assembled. Three general types of conveyors are in common use, the choice depending upon the size and shape of parts to be moved, the processing specified and the conveyor location in relation to pickup and discharge points.

Moving up an incline by magnetic belt.

Magnetic belts are used in some cases to move components up short inclines and along horizontal areas. In other cases, monorail conveyors with suitable hangers are used. Manual loading and unloading of hangers is necessary but often the unloading is done by assembly operators who perform other operations as well.

In many instances the racks, designed for the size and shape of parts, are employed both for convenience and because they support each stamping in favorable position for the series of production operations. In general, racks are supported in carrier frames, in groups of six or seven, because processing equipment is designed to handle this number of units, moving in parallel.

Arrangement of Conveyors Allows for In-Plant Storage

The loading and unloading of multiple type racks takes some time and often it cannot be done to advantage in continuously advancing lines, so the racks are hung on power-and-free conveyors. This arrangement permits groups of racks to be shunted to desired positions or storage areas where they may remain as long as necessary. Then they are fed onto power lines and through the processing system.

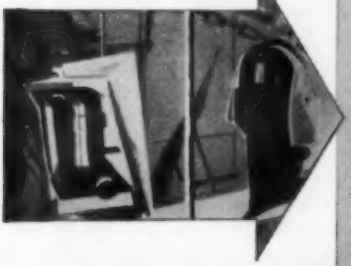
When racks pass the unloading stations, they are fed onto another circuit or, if not needed for parts to be processed immediately, they

Here's the

PHOSPHATE COATING *You asked* TURCO TO MAKE

During the first six months of 1959, Turco undertook an extensive survey of the phosphate coating market. Hundreds of users of these coatings were interviewed. Thousands of questions were asked. When the answers were tabulated, Turco began the task of building an iron phosphate process to the *exact specifications* called out in the survey.

The new process is now available. It is called Turco Paintite. Paintite has been thoroughly field-tested in the production lines of a dozen Turco customers. It has passed the most severe tests with flying colors. Turco is proud to announce the addition of Paintite to its ten other Turcoat phosphate and conversion coating processes that provide a better bond for organic finishing.



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—Formulated as Result of Industry-Wide Survey...

1. **SUPERIOR CLEANING**–Exclusive wetting system provides heavy-duty uniform cleaning. Cleans & phosphates simultaneously.
2. **TEMPERATURE VERSATILITY**–Efficient anywhere within range of 140° to 180°F. Temperature control is not important.
3. **LOW FOAMING**–at any temperature within recommended range.
4. **LESS POST RUST**–Eliminates post rusting problem often encountered with iron phosphate processes.
5. **NO WHITE STREAKING**–Extra free rinsing. Leaves no residue.
6. **ECONOMICAL**–Low in initial cost. Low in maintenance cost. Low in cost per sq. ft. Long-lived, even under mass production use.
7. **UNIFORM COATING**–even on edges and points. Won't show through on low-pigmented paints.
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9. **LESS SLUDGE**–less scale. Minimizes clean-up problems.
10. **RESERVE ACIDITY**–combats alkaline water conditions. Constant control not necessary.
11. **SUPERIOR SERVICE**–by Turco's vast network of technically trained servicemen, located in industrial centers throughout the world.
12. **REQUIRES ONLY 3 STAGES**–for dip or spray washing. Can be efficiently used in 5-stage operations, if desired.

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Please send valuable booklet with Phosphating Reference Chart and full details on Paintite. I understand there is no cost or obligation on my part.

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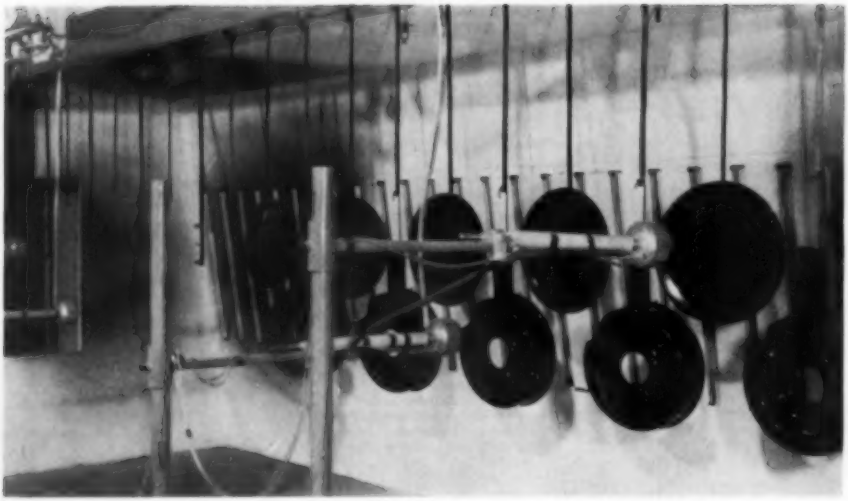

Air cleaner components move by overhead conveyor through electrostatic painting zone.

are shunted into storage until wanted again. This movement of racks to storage is done without affecting the main line. Certain carriers are shunted into automatic unloading position where parts are ejected six at a time and fed into an assembly setup, usually without manual placement; this speeds the assembly and saves time for the assembler.

How Small Parts Are Handled and Transferred

Most of the foregoing information applies to parts of large to medium size, many of which must be in preferred positions to insure specified treatment. However, there are many small stampings in which the over-all economy dictates bulk handling in batches. Such parts may be bulked in tote pans or be transferred to hoppers but, if they have to move through cleaning and painting before assembly, they must be so handled that their various surfaces will receive suitable treatment.

Accordingly, before such parts enter the cleaning, phosphatizing and painting system, they are fed onto a wire mesh belt and are so distributed thereon as to receive the specified treatment. The belts used travel through the lower portion of tunnels where the parts are sprayed on all surfaces. Of course, only stampings that will not trap solutions in pockets can be handled in this manner. At the end of the processing belts the small parts feed into tubs or hoppers, or onto magnetic belts for transfer to assembly points.

The handling of stampings into assembly machines depends, of course, upon the shape of the parts

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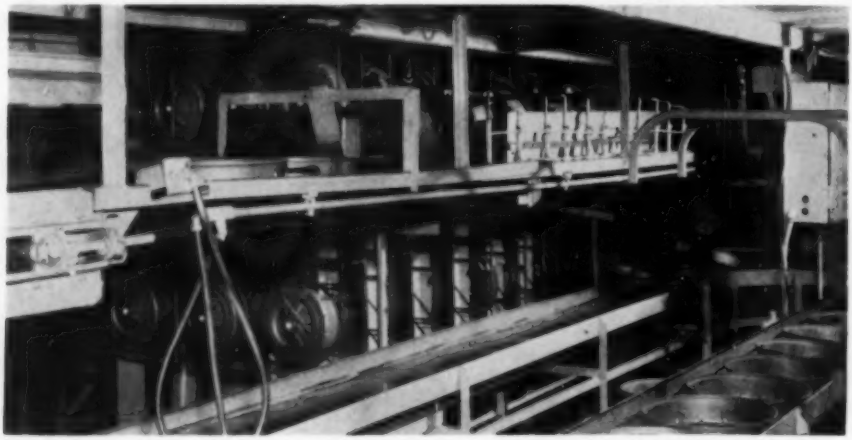
Small stampings are carried through spray cleaning and phosphatizing on a wire mesh belt.

and the type of assembly to be made, and upon how the parts must be oriented with reference to each other and to the assembly mechanisms. Quite often hoppers or a hopper plus a magazine feed can be used, but some manual placement into the magazine or into the assembly position is usually required.

In all cases, manual labor is either avoided entirely or is minimized, both as to effort required and as to time consumed—at least within the limits of the machine chosen. Naturally, the degree of mechanization that is justified depends upon the total number of assemblies to be built and upon the rate of assembly that is needed or that is possible with the equipment provided.

Much of the assembly work is done by spot or projection welding because it can be done rapidly—

Here painted components are racked to be unloaded automatically for assembly stations.



often on an automatic basis—because welds are permanent and secure. Riveting, staking, screw fastening and other assembly methods are used in those instances where they yield definite benefits that may not be attained otherwise.

It is not unusual for assemblies —often those involving many parts —to be completed at rates of several hundred an hour, perhaps with only one or two operators at the assembly machine. Usually, the operator does some manual work, such as loading magazines and removing completed assemblies, besides seeing to it that the machine is functioning properly and yielding assemblies at the right speed and of the required quality.

From the foregoing it is clear that the plan of operations described here makes for high overall economy. This economy is never obtained at the expense of quality. In fact, the processing is designed to insure uniform high quality products, partly by correct choice of equipment and materials, and partly through minimizing human variables that could adversely affect some well planned operations.

Sells Employees on Safety

"The Big Payoff" is the title of a new National Safety Council publication aimed at selling employees on the value of their companies' accident prevention program.

The 12-page, 4-color 4x8-in. cartoon pamphlet includes some straight-from-the-shoulder talk about how employees benefit from taking an active part in a safety program.

It tells of the effect of accidents on the worker and his family, and shows how he is the real winner in a 'round-the-clock safety program.

"Employees who have a personal stake in a safety program tend to be safer workers," according to the Council.

Further information on "The Big Payoff" is available from the N. S. Council, 425 N. Michigan Ave., Chicago 11, Ill.

T. F. Marcotte, Chemist, Joins O'Brien Corporation

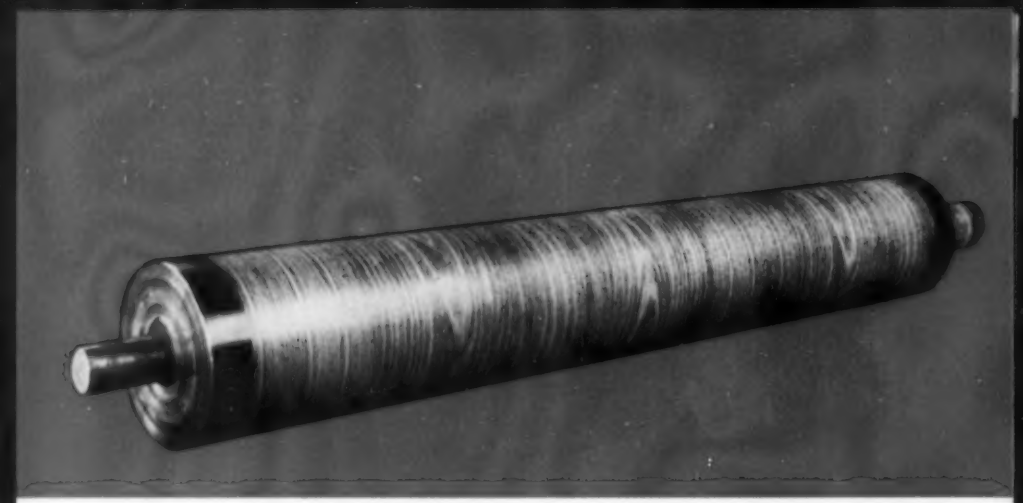
Thomas F. Marcotte, formerly of Louisville, Ky., has been appointed to the industrial division of The O'Brien Corp.'s Paint laboratory at South Bend, Ind. Marcotte's immediate assignment is research and development of industrial enamels, particularly for metal appliances. He has had 12 years' experience in this field prior to coming to South Bend.

Sprayon Products Announces New Warehouse Facilities

Newly expanded warehouse facilities at the company's No. 4 plant on East 70th St. have been announced by John G. Ellis, president of Sprayon Products, Inc., Cleveland, Ohio. Now totaling some 30,000-sq.ft., the increased space will allow efficient storage and bulk drop shipment of customers' orders in almost any amount. The company is a leading custom-loader of self-spraying aerosol products.

Sprayon's new warehouse in Cleveland, Ohio.

The new facilities will accommodate some 600,000 aerosol cans ready for shipment. Sprayon also maintains a Los Angeles warehouse of 4000-sq.ft. for quick service to West Coast customers.



How to Handle and Care for ENGRAVED CYLINDERS

BY WILSON FOLEY
Director of Research & Development
for Southern Gravure Service, Inc.*

SINCE design printing, in as many as three colors on a base color coat, has become so popular the technique of handling and using engraved cylinders for grain reproduction machines has improved. It is now possible to obtain one or a set of three cylinders that will completely transfer fine wood grain, textile, marble or most any design or pattern. With so many of these cylinders in use today, their care and correct treatment takes on added importance, both from an operating and from an economic standpoint.

*2929 S. Floyd, Louisville, Kentucky.

There is little wear on the inking rolls on a design reproducing machine. Considerable more wear occurs on the engraved cylinder and the offset roll due to the scraping action of the doctor blade. However, much of this wear is compensated for by the hard chrome plating on the surface of the printing cylinder. An engraved cylinder is probably the most delicate and certainly the most expensive roller on the graining machine. Continuous, high quality printing, as well as economical operation, depends directly upon the proper care and treatment of this cylinder.

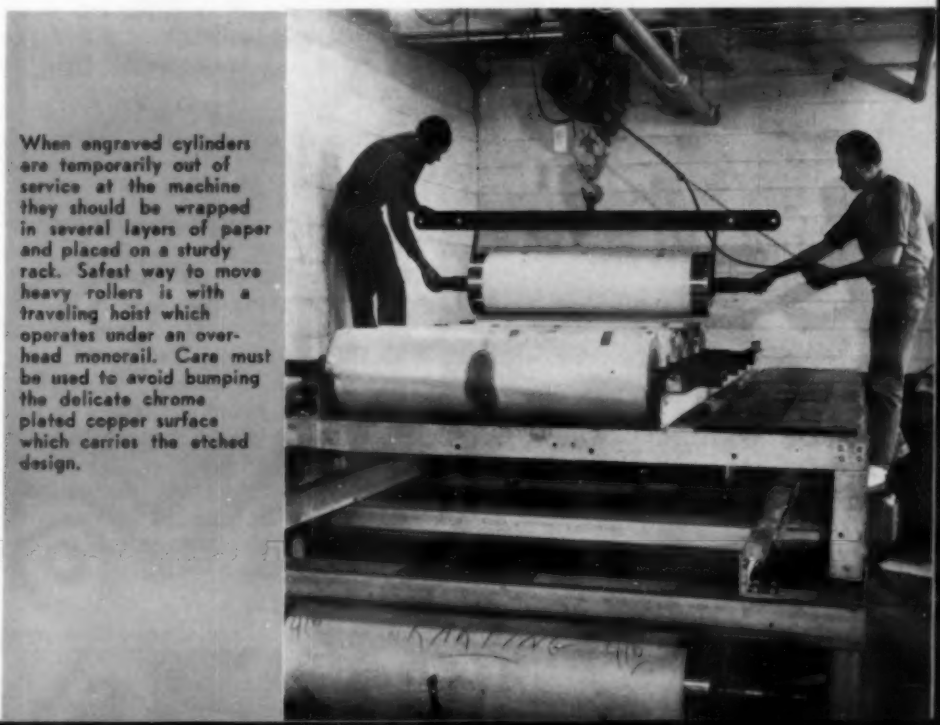
Copper Plated, Etched and Chrome Plated

Standard engraved cylinders are made in diameters ranging from 6-in. to 20-in., and in face lengths of from 26-in. to 52-in., with special sizes available on special order. The base or core of the cylinder is made of either steel or aluminum, depending on the customer's requirements. The printing surface of the cylinder is covered with soft copper to a thickness of 0.020-in. after polishing. The graining design is accurately engraved on this copper surface. The engraved copper cylinder is then protected by chrome plating in a thickness that may range from 0.0003-in. to 0.0006-in. While the hard chrome plating resists wear from the continuous scraping of the doctor blade, it is not a suit of armor that may be relied upon to protect the cylinder against accidental bumps and scratches.

Cylinder Diameter; Printing Without Repeat of Design

The diameter of the cylinder determines the length of printing that can be made without repeating the pattern and, of course, the face length of the cylinder is selected according to the width of panels or the sheet stock to be printed. A 6-in. diameter cylinder will print a length of 18 11/16-in. without repeat; a 9-in. cylinder will print 28.27-in. without repeat, and a 20-in. cylinder will print 62-in. without repeat.

For some designs, such as marble, textile and even some wood grain, a repeat printing of the pat-



When engraved cylinders are temporarily out of service at the machine they should be wrapped in several layers of paper and placed on a sturdy rack. Safest way to move heavy rollers is with a traveling hoist which operates under an overhead monorail. Care must be used to avoid bumping the delicate chrome plated copper surface which carries the etched design.

tern is not objectionable. Where some grain configuration is outstandingly noticeable, even though it does not occur in exactly the same location on each panel, repeat printing is sometimes not desirable. In such cases a larger diameter cylinder will be needed.

Protecting the Engraved Surface While Handling

Care and skill must be used in handling engraved cylinders, especially when changing cylinders on the reproducing machine—so the engraved surfaces will not be bumped or scratched. For large steel-based cylinders which are quite heavy, a strong canvas or leather sling may be used to safely transfer the cylinder from machine to storage rack by means of a lift truck or hoist.

A heavy duty canvas sling, attached to a steel yoke which is suspended under an electric hoist, forms a safe cradle for lifting the roll.

When engraved cylinders are to be changed on the reproducing machine, it is advisable to first clean the cylinder thoroughly with solvent; then cover the entire surface of the cylinder with several layers of paper secured in place with bands of masking tape. The cylinder should be covered before it is removed from the machine. Layers of paper will protect the engraved surface from scratches by rubbing against buttons, belt buckles, etc., worn by operators who handle the cylinder. Even though the cylinder may be in storage for only a short time, its protective paper wrapping should not be removed until the cylinder has again been placed in position in the reproducing or graining machine.

How Doctor Blade and Ink Affect Life of Cylinder

The doctor blade plays an important part, not only in cleaning ink off the cylinder, but in preserving and prolonging the useful life of the engraved surface. The doctor blade should be kept sharp and true at all times. The scraping edge of the blade should be checked for burrs which would scratch the surface of the cylinder.

Another important factor that will affect the wear of an engraved surface is the pressure exerted be-

[*Continued on page 39*]

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properties of SC aromatic solvents

PRODUCT	Initial °F.	Dry °F.	Dry °C.	Flash Point °F. (Closed Cup)	Speed Evap. Min.	Kauri Butanol Value	Aniline Point °F.	Specific Gravity @ 60°F.	Lbs. Per Gal. @ 60°F.	Aromatic Equivalent Content
SC Solvent #1	211	240	116	30	2.5	86.4	+ 1	.8259	6.88	74%
SC Solvent #1-A	202	235	113	25	2.5	67	+48	.8003	6.66	52%
SC Solvent #2	270	308	153	81	14.0	80	— 2	.8418	7.01	76%
SC Solvent #2-B	277	370	188	81	21.5	75	+12	.8388	6.99	68%
SC Solvent #3	356	400	204	135	64.0	72	+24	.872	7.26	69%
SC Solvent #28	329	379	193	122	51.0	73	+14	.8597	7.16	74%
SC Solvent #100	321	351	177	115	21.0	93.2	—37	.8708	7.25	96%
SC Solvent #150	369	412*	211*	152	98.0	91.8	—26	.8899	7.41	96%
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*End Point

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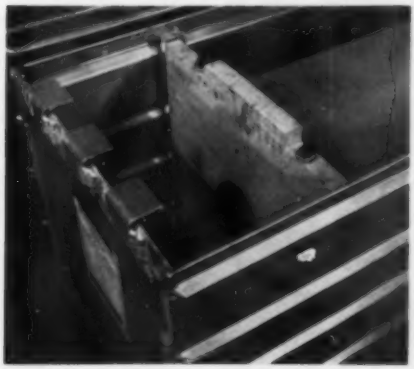
tween the doctor blade and the surface of the cylinder. The amount of pressure required to clean the surface depends upon both the fullness (depth) of the etched design and the viscosity of the ink. For longer cylinder life, use only enough pressure to clean the surface of the cylinder.

There is not much that can be done about the fullness or depth of the etched surface, as this is determined by the particular design, but the viscosity of the ink can be controlled. The heavier the viscosity of the ink, the more pressure will be required to clean the surface of the engraved cylinder, thus increasing the wear.

In many cases the ink is used too thick. In fact, some operators use the ink right out of the container, without thinning. To reduce wear

Paper wrapped engraved cylinder is suspended in mid air by heavy wood lock bearings inside a high tensile strength aluminum alloy container. In this shipping case the cylinders may be returned for de-chroming and re-chroming with safety. The cylinder cannot touch the inside walls of the case. This reinforced aluminum container meets overseas shipping specifications.



How to use, handle, clean, wrap, change, store, pack and ship the engraved cylinders of machines that are used for reproducing beautiful wood grain and other ornamental designs.

on the cylinder, the ink should be used at the lowest possible viscosity and still retain the desired color and printing quality. In many cases the ink supplier can change the formulation of the ink so that a thinner ink will produce satisfactory results.

Inspect Cylinder for Wear; Packing for Shipment

Frequent inspection of the entire surface of an engraved cylinder should be made, either at the end of the day or when cylinders are changed. Look for signs of a trace of copper showing through the chrome. At the first slight show of copper, the cylinder should be returned to the manufacturer to be stripped and rechromed. If this is not done, and if the doctor blade is allowed to contact the engraved copper, the etched design will soon be destroyed.

Extreme care must be taken when shipping an engraved cylinder back to the manufacturer to be de-chromed and chrome plated. If the cylinder is to be shipped in a wooden box, it is advisable to wrap it in several layers of paper; then follow with a heavy Army blanket, and finally place wooden strips about 1½-in. wide by 1½-in. thick all around the cylinder, with the

ends of the strips extending beyond the face so that the strips can be interlaced with soft wire on both ends to hold them in place. The cylinder may then be placed in its wooden shipping box.

The engraved cylinders used in machines for the reproduction of decorative wood grain and other ornamental designs are expensive; they must be used and handled very carefully and skillfully to avoid any damage or premature wear.

Probably the best method of shipping engraved cylinders is to use a special container made of high tensile strength aluminum alloy. Inside the container, at both ends, are heavy wood lock bearings that support the wrapped cylinder in mide air so that it cannot touch the inside walls of the container. Then, even if the container receives some rough handling, the cylinder will not be damaged. These aluminum containers meet overseas shipping requirements.

Make Every Effort to Keep Cylinders Clean

Cleaning an engraved cylinder contributes something important to its usefulness and efficiency as a printing medium. If cleaning is not thorough and if ink is allowed to remain in the tiny lines of the engraving, the ink will dry and harden and be very difficult to remove.

The cylinder should always be cleaned with a suitable solvent. If it is to remain in storage over a period of time, it should be thoroughly cleaned and wrapped in paper to prevent dust from settling in the etched surfaces. When the cylinder is to be put back into use, its surface should again be cleaned with solvent before it is placed in operation.

Engraved cylinders are valuable adjuncts to your printing operation. Their useful life can be extended through proper care in use, in handling and in storage.

Anthony J. Rolleri Honored by Maas & Waldstein Co.

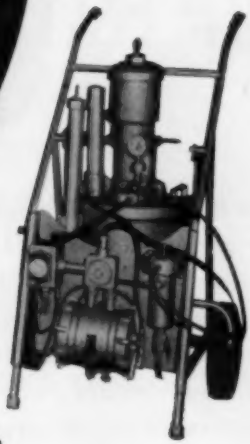
Maas & Waldstein Co., Newark, N. J., manufacturer of lacquers, enamels and chemical coatings, recently paid honor to Mr. Anthony J. Rolleri of Belleville, N. J., for his 50 years of employment with the company.

Anthony J. Rolleri

Mr. Rolleri started to work for the company in 1910 as an office boy. Mr. Rolleri continued his employment with the company in various supervisory capacities including experimentation with lacquer enamels for use in the automotive industry. Mr. Rolleri is presently supervisor of the Lacquer Enamel Department.

At a recent dinner party of company executives, Mr. Rolleri was presented with a gold "50 Year Club" pin and a diamond ring by Dr. G. Klinkenstein, President of Maas & Waldstein Co.

Dr. Klinkenstein praised Mr. Rolleri for his diligence and loyalty to the company, as well as his many ideas and suggestions for the progress and advancement to the paint, varnish and lacquer industry.



Furniture Manufacturer Saves Material, Gets Better Finish With **THE H-GUN** and HydraAirless 20.

Timely Furniture Co. of Huntington, Indiana, long respected for fine furniture, now uses *heated airless* and THE H-GUN to improve the finish quality on their complete line.

After installation of the HydraAirless system, a production line test was performed on 150 dressers and 150 chests using THE H-GUN. The tests showed a 25% material saving over conventional spray. Inspection of the units sprayed with THE H-GUN showed that a heavier build of material was achieved, especially on the tops, providing a better rubbing surface. Improved flow-out and leveling characteristics reduced rubbing time considerably.

You can benefit the way Timely Furniture has. Here is what THE H-GUN will do for you: • Top Quality Finish • More Production at Lower Cost • Substantial Material Savings

Write the Spee-Flo Company or phone your nearest Spee-Flo Distributor for an on-the-job demonstration. Prove to yourself that you can get quality control, plus time and material savings.

The SPEE-FLO Company

A complete catalog on Spee-Flo HydraAirless systems with THE H-GUN is available.

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SOLVENTS
for industrial finishes

By F. Warren Porter

Facts about a dozen solvents that are used singly or in combination with others to serve as thinners for modern coating materials. A few of them are used occasionally for cleaning metal surfaces in preparation for painting.

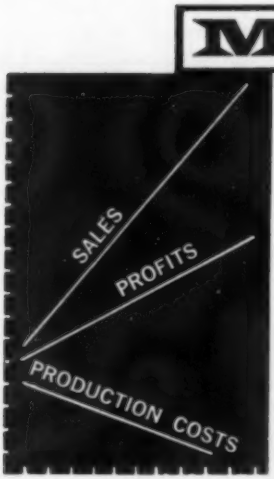
IN WORKING with the application of finishes, as well as in their manufacture, it is important from both the standpoint of quality and cost that the selection of proper solvents be made. In order to make a wise selection of a solvent it is first necessary to understand certain characteristics or properties of solvents that set one apart from another. The properties most often considered in solvents are specific gravity, weight per gallon, boiling point (initial), evaporation rate, distillation range, flash point, aniline point, color, kauri butanol number and odor.

In the application of finishes perhaps the most important properties to focus immediate attention on are evaporation rate, solvency power and cost. From a safety standpoint it is also well to review the flash points of different solvents. It may be necessary to use a solvent with a low flash point, whether you want to or not, but at least you will know that its use requires care, and you can also advise others of the degree of danger involved.

The evaporation rate of a solvent indicates how rapidly or slowly it will change from a liquid to a gas (volatility) at room temperature and elevated temperatures. This property of a solvent determines, to a great extent, the flow characteristics of a wet paint film. If the solvent used in a paint or lacquer has a high evaporation rate, the film will tend to set up quickly. On the other hand, if the evaporation rate is low the film will remain open longer. The former condition leans to orange peeling and the latter to runs and sags. A proper balance of slow and fast solvents is necessary, depending on the method of application to produce a quality finish.

The solvency power of a solvent (whether it is strong or weak) determines how well the particular solvent will mix or be compatible with other ingredients in the finish formulation. If weak solvents are used in certain short-oil alkyds,

progressive companies use *Randolph* performance-proved hi-quality finishes



Many firms are finding a definite relationship between increasing sales and the use of Randolph coatings. Alert to the products that make greater profits and lower production costs possible, keen-minded industrial management buys Randolph for powerful reasons. Sales-stimulating eye appeal. Practically indestructible wear that keeps a product looking young.

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epoxy and phenolic-resin solutions and nitrocellulose lacquer solutions, the resins will start to precipitate or come out of solution. Depending on the degree of incompatibility, this precipitation may appear as a clouding of the solution (which, of course, will go undetected in a pigmented solution), a slight curdling appearance of the liquid, or a heavy throw-out of resin, resulting in heavy settling of material in the bottom of the container.

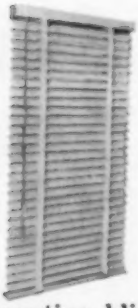
In connection with the use of various product coatings and finishes it is necessary to know the solvency power of individual solvents, as well as the solvent requirements of the different types of resin solutions. Technical literature will show what solvents may be used to dissolve or reduce different types of resins and resin solutions. Manufacturers of finishes will specify the types of solvents to be used with their materials. It is wise to follow their directions and be sure of yourself before making any arbitrary changes of your own.

You may make a substitution of solvent which appears to be good when mixed with the wet finish material; but it may cause a drop in surface gloss of the finish during the baking or drying cycle. This drop in surface gloss may be the result of the stronger solvents in the finish being the quicker to evaporate. If the strong solvent leaves before the weaker one, in which the resin solution is partially or totally incompatible, then gloss troubles will show up quickly in the dried film. For a good sharp gloss on a finish it is always wise to have a portion of the solvent in the formulation composed of a slow evaporating, high solvency material.

Some Possibilities of Solvent Blends and Substitutions

By becoming more familiar with the specific properties of different solvents it is sometimes possible to make certain substitutions or blends of solvents that will save you money over the spread of a year. The accompanying table, if interpreted properly, will show how a mixture of acetone and methyl ethyl ketone may be used to replace straight methyl ethyl ketone. Or possibly how toluol may be used as a partial replacement for acetone and methyl ethyl ketone. To work out these substitutions, you must weigh cost, solvency power and evaporation rates of one solvent against another.

A blend of solvents may work better than straight substitutions. Once you have worked out a favorable cost picture, then try a small amount in your production setup to be sure you are not going to run into any difficulties before proceeding further. It will pay you to learn the types of solvents used with your finishing materials, particularly if you are buying a thinner by a code number from a supplier of finishing materials. The information given in the table will vary slightly with different suppliers of solvents due to variations in manufacturing methods, as well as systems for classification of materials. As for the cost information on each solvent, I recommend that you fill this in from your pres-

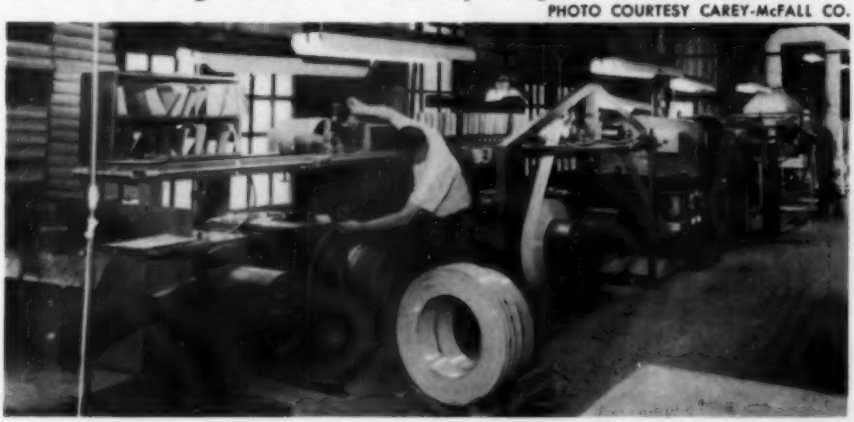


Cosden Roller Coating Finishes Surpass Carey-McFall's Tough Standards For Blind Stock

Consider the requirements a finish must meet to be acceptable to Carey-McFall Co. for use on venetian blind stock. It must offer superior adhesion, formability, durability, beauty—plus absolutely trouble-free application at high strip speeds. Problems simply can not be tolerated on a continuous roller coating system with curing schedules of 15-35 *seconds*. Now consider the fact that Carey-McFall has met this challenging combination of requirements with Cosden one-coat roller coating enamels and vinyls—enamels for the slats and vinyls for the deep-drawn and roll-formed parts.

The point is this: if your product demands a quality roller coating finish, with a tough set of specifications, our service engineers can help you. You'll soon see why Cosden is rapidly becoming *the name* in roller coating finishes. Write today for product information.

PHOTO COURTESY CAREY-McFALL CO.



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ent or prospective supplier. It may vary from time to time and it will certainly vary according to how much you purchase at any one time.

The data shown in the table below will vary with different manufacturers. This is a reflection of the method of manufacture employed, variations

SOLVENT DATA TABLE

Solvent	Kauri Butanol No.	Evaporation Rate (Relative)	Boiling Range °F.	Flash Point °F.	Cost per Gallon	Wt. in Lbs. per Gallon
Acetone	100+	6.0	130-135	15 TOC		6.59
Benzene	100+	4.1	172-181	-10 TOC		7.34
Methyl Ethyl Ketone (MEK)	100+	4.0	172-178	25 TOC		6.71
Ethyl Acetate	100+	4.1	156-176	40 TOC		7.47
Toluene	100+	2.0	230-232	65 TCC		7.24
Methyl Isobutyl Ketone (MIK)	100+	1.6	237-243	73 TOC		6.68
V&P Naphtha	41	1.4	248-290	57 TCC		6.28
Butyl Acetate Normal	100+	1.0	239-266	100 TOC		7.34
Xylene	98	0.7	280-287	80 TCC		7.22
Butyl Alcohol Normal	100+	0.5	240-246	115 TOC		6.75
Diacetone Alcohol	100+	0.2	280-360	145 TOC		7.83
Mineral Spirits	45	0.2	316-390	104 TCC		6.55
Hi-Flash Naphtha Aromatic	70	0.1	314-395	112 TCC		7.08

(Fill in with your supplier's prices.)

Note: Relative evaporation rates are based on the evaporation rate of butyl acetate which is assigned a value of 1.0. If the number given for a solvent is higher than 1.0 this means that it evaporates approximately the value shown faster than butyl acetate. If the number is lower, then it is in proportion that much slower in evaporating. Example: Where butyl acetate equals 1.0 and toluene equals 2.0, toluene evaporates twice as fast as butyl acetate. Butyl acetate, under specific controlled conditions, evaporates in 15 minutes. Toluene under the same conditions would evaporate in 7½ minutes. Where butyl acetate equals 1.0 and xylene equals 0.7, xylene evaporates 0.3 slower or approximately in 19 minutes. (15 minutes plus 4 minutes.)

in product description and, in some cases, it depends on whether the solvent was derived from coal tar or petroleum distillates. It is recommended that you contact your supplier for specific data on the particular solvents you are using.

Many of the solvents named in the table have no end point when titrated against a Kauri Gum solution. These solvents have been given values of 100 or more KB for demonstrative purposes. The flash points are followed by either TCC (Tag Closed Cup) or by TOC (Tag Open Cup) which indicates the type of Tagliabue cup used to check flash point, namely open or closed. Many of the solvents, such as the ketones and alcohols, are sold by the pound.

[*Continued on page 48*]

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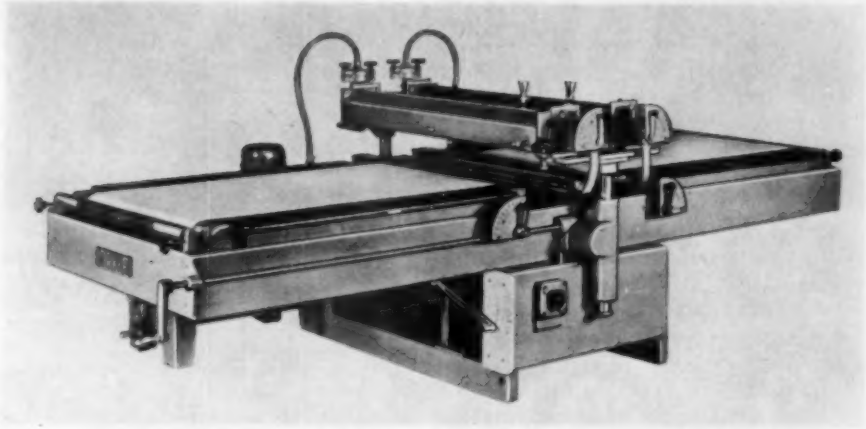

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[*Continued from page 46*]

Kauri Butanol Values; Specific Gravity; Weight per Gallon

The solvency power of a solvent, as mentioned previously, is referred to as a K.B. (Kauri Butanol) Number. This value is determined by the following general method: 100 grams of finely pulverized Kauri gum is dissolved in 500 grams of butyl alcohol. This solution is heated to the boiling point and held until the gum is completely in solution. (The solution is clear.) After it cools, the solution is brought back into the 100 to 500 grams balance by adding back the amount of butyl alcohol lost during the heating process. Twenty grams of the cooled solution is weighed out into a glass beaker which is then placed over a piece of news print (fine black printing). The solvent to be tested is added slowly and the quantity added is measured during the addition. (Titration burettes usually are used for this purpose.)

The solvent is added to the gum solution until the mixed solutions become cloudy to the point that the newsprint, as seen through the solution and bottom of the beaker, become blurred. The number of milliliters of solvent added when the newsprint becomes blurred is the Kauri Butanol number. For example, VM&P naphtha has a KB number of 41. The newsprint became blurred through the cloudy solution after 41 milliliters of VM&P naphtha had been added.

The specific gravity of water is 1.00 and its weight is 8.3-lbs. per gallon. These figures vary with changes in temperature, but for all practical purposes the above mentioned figures may be used when the temperature is around 77° F. The specific gravity of all other materials is based on water, so that by multiplying the weight of water times the given specific gravity of a solvent, its weight per gallon may be quickly determined. For example, VM&P naphtha has a specific gravity of .756. Multiply .756 x 8.3 and the answer equals 6.27-lbs. per gallon. These figures are helpful in comparing prices of solvents where some are purchased by weight and others by volume.

Boiling Point; Distillation Range

The initial boiling point of a solvent is important to know since this factor may have an effect on the smoothness and continuity of a cured film. If a film is subjected to too high an initial baking temperature—one that far exceeds the initial boiling point ranges of the solvents in the formulation—the film will set very rapidly with heavy film irregularities and considerable porosity. Both of these defects are caused by a rapid boiling off of the solvents in the baking process.

By reviewing the distillation range at the same time as the initial boiling point, it is possible to determine when the solvent will start to evaporate or boil off and when it will leave the film entirely. For example, if you are baking a film that has mineral spirits in it, the solvent will start to boil off at 315°F. and leave the film at 390°F. These are approximate figures because, as is usually the case, com-

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plications enter the theory due to the fact that certain materials release solvents faster than others. The information provides a starting point; for example, you know you must bake a film that has mineral spirits in it at least 315° F. to get the solvent started on its way out of the film quickly.

Flash Points; Odor; Color

Flash points of the solvents are those temperatures at which a solvent will ignite when a flame is passed over their surface. With a flash point of 80° F., xylol at a temperature of 80° F., will burn immediately when exposed to a flame or spark. For example a cigarette burning near an open container of xylol on any hot day in the summer, can easily spell serious trouble. Tagliabue open and closed cups are used to measure flash points. Solvent charts usually indicate which method has been used by showing TCC or TOC after the proper item.

Odor is not too much of a factor in industrial finishes where the finishing work is done in well ventilated areas and baking usually follows immediately. It is a factor in house paints where painting is done indoors and the residual "paint odors" are objectionable. The water-base paints on the market today have come a long way in solving this problem for the consumer.

Color of a solvent becomes important when the solvent is used in special white and light colored finishes. If a solvent is very dark in color this is usually caused by one kind or another of impurity. It is possible for these impurities to migrate from the solvent into the resin or binder phase of a formulation and cause discoloration of the cured film. The change would be very slight and the solvent would have to be very dark in color to cause this effect. If a solvent is off in color from say a water white, it is usually a good idea to check and find out the cause for the discoloration. It could easily be that the drums in which these solvents were stored or delivered were rusty on the inside. If nothing else, it may point out that the same drums should not be used for storing solvents for unusually long periods of time.

Aniline Point

The aniline point of a solvent is something like a Kauri Butanol value in that it tells a story about the make-up of a solvent and its solvency. Actually, aniline oil is added to a portion of the solvent, heated until the solution clears and then the solution is permitted to cool and cloud as in the Kauri test. The temperature at which it clouds is the aniline point. The lower the aniline point, the greater is the percentage of aromatic and unsaturated compounds (stronger solvents) and the better the solvency power of the solvent. In passing, let me remind you that aniline is a poison. It should not be breathed or permitted to contact the skin. Aniline tests should be made only under controlled conditions and by qualified personnel.

An intelligent review of your use of solvents may result in improving the quality of your finishes and perhaps save you money.

Epoxy Coatings Versus Clean Spraying

ONE OF THE MORE glamorous names in industrial finishes during recent years has been the epoxy resin coating. An extremely chemically resistant coating, sometimes it has failed to live up to many of its notices, solely because of poor application techniques and inadequate knowledge of the product on the part of the finisher.

Failures are likely to occur in those installations where a variety of coatings are used. In these plants, lacquers, enamels, butyrates and expoxies may all be sprayed during one day, perhaps in the same spray booth and possibly with the same spray gun and the same fluid carrier lines. Since most of these coating materials are incompatible with each other, it is important that the equipment be thoroughly cleaned between changes.

In changing from enamels to nitrocellulose lacquers or vice versa, merely running wash solvents through the lines has been satisfactory for many years, but and particularly when butyrates epoxies are being used, this simple procedure is inadequate.

Epoxy resin coatings are probably the most generally incompatible types of finishing materials. This is true of most highly-resistant products. As a result it is not unusual to find small specks being deposited on the sprayed film. Often this is mistaken for spray room dust and the real source is overlooked. Frequently these specks

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are from inside the fluid lines or inside the spray gun, in and around the needle where mere wash solvent spraying has failed to soften and dislodge retained particles from previously sprayed materials.

Where surface imperfections are noted, many finishers will resort to rubbing rather than stripping the cured epoxy film. The surface will be made to appear smooth but Mr. Finisher does not consider the particles that have been trapped in the film and which now lie under the surface. These specks become weak points in an otherwise chemically resistant coating.

Recently an evaluation test was conducted, comparing films of equal thickness, produced from the same material and cured at the same temperature. The only point of difference was the application equipment. In one case a new clean fluid line and a new clean spray gun were used. In the other instance a normal fluid line and gun which had been cleaned with solvent spray were used.

After curing and conditioning the films the test panels were placed in a standard 5% salt spray cabinet. At 72 hours small discernible failures began appearing on the panels that showed specks in the film from the improperly cleaned equipment. No trace of failure was noted on the film applied by the new clean equipment. At 192 hours the originally observed small failures had become definitely large points of corrosion and the test panels were removed. The other panels were continued until 480 hours was reached with no failure.

It was quite obvious that many points of weakness can show up as a result of using unclean equipment. Certainly a finishing job performed under these conditions would cast a dark name on epoxy coatings in general.

Possibly fluid lines and spray guns used only for epoxies may be the answer. On the other hand, just dismantling the equipment parts and giving them a more thorough cleaning could be a more practical answer. The choice is the finisher's. In the final analysis, the cost of failures and rejections must be balanced against the cost of properly cleaning application equipment.—*M. G. E.*

Swanson Joins Despatch Oven

Wm. C. Swanson, Brookfield, Wis., has been appointed industrial representative for Despatch Oven Co., Minneapolis. Mr. Swanson's service area will include several counties in eastern and southern Wisconsin.

During the past ten years Mr. Swanson has been associated with various companies manufacturing heat treating equipment and accessory components. His duties have included sales, service, and design and application engineering.

APCO Opens Solvents Terminal in Memphis, Tenn.

Anderson-Prichard Oil Corp., Oklahoma City, announces the opening of a Memphis industrial solvents terminal at 1081 Kansas, Memphis, Tenn.

The move makes available to industries of the Memphis marketing area the complete APCO line of industrial petroleum solvents as well as chemical solvents by major manufacturers. Included are aliphatics, aromatics, alcohols, ketones, esters, glycols and chlorinated solvents. These products will be delivered in drums, tank wagons, transports and tank cars.

Individual pumps have been installed at the terminal to maintain the high purity standards of the APCO solvents.

Ted Grays, a chemical engineer of wide experience in the industrial solvents field, has been named manager for the new APCO terminal.

Some Plain Facts About

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ONE Blacosolv trichlorethylene is the brand with the *original* and *continuously modernized neutral stabilizers.* Blacosolv started this trend of continuous modernization 28 years ago. That's why Blacosolv is the leading brand of metal degreasing grade trichlorethylene on the market today.

TWO The patented stabilizers in Blacosolv are the reason users spend less time on cleanout; get more weeks, even more months use from a barrel. Blacosolv eliminates sludging; keeps heating surfaces clean and efficient; remains stable after repeated distillation.

THREE Blacosolv can be used on *all* metals, ferrous and nonferrous or combinations thereof. Blacosolv leaves metal parts clean and bright without etching or staining. It resists heat, air, light and eliminates acidity from contaminants, while remaining neutral and non-salt-forming . . . the principal reason many other solvents break down so easily.

FOUR Users of Blacosolv gain the unique benefit of field service technicians backed up by 28 years of experience in the manufacture and operation of degreasing equipment and the use of degreasing solvents as well as the most extensive research laboratories available anywhere.

Blakeslee customers thus get everything from one expert source—equipment, solvents and complete field service.

ALSO AVAILABLE: Blacosolv No. 2 (Perchlorethylene) to meet your requirements for higher vapor temperatures such as are desired in the drying of metals, etc.

**Blacosolv is Blakeslee's registered trademark for trichlorethylene and perchlorethylene.*

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To Make Your Roller Coater More Useful

MENTION roller coating to some people and they immediately think of it in terms of coating sheet stock. While this method of application is well suited to coating plywood panels, composition board, chipboard, plastic sheets, etc., it can also be used for coating relatively narrow strips of solid stock and plywood as well as other materials.

Roller coating is one of the economical methods of application because there is no waste of material. Coating material can be pumped directly from the drum into the roller coater by means of a special drum head which supports a pump and an air-driven agitator that keeps the paint pigment in suspension at all times.

This method of application also offers an accurate control of film thickness. Modern roller coaters have dials that indicate roller settings. If dial readings are recorded, it is possible to apply exactly the same film thickness on any repeat runs. This, of course, would call for using the same material, the same temperature and the same viscosity.

Where standard size sheets or panels are to be coated, mechanical feeders are available. When used with a conveyor to carry the coated sheets through a bake oven or a force dry oven, this makes an extremely economical automatic finishing system. —*P. C. Bardin, Field Editor.*

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from Chicago

Commode with plastic surface on top and leaves of matching wood grain. The entire piece is heat, stain and mar resistant. It opens to become a buffet server or full size dining table to easily accommodate 12. Shown at the American Furniture Mart.

■ BY ROSALIE FLANK

Furniture Show

A NINE-DAY, UNORTHODOX winter international home furnishings market, which officially opened in Chicago at the American Furniture Mart and Merchandise Mart on Friday, January 6, closed Saturday, January 14, with a controversial record which will be discussed by the industry for many years. . . .

The cutback in real buying by consumers and the adjustment downward of retail inventories had its impact on manufacturers. In general, furniture producers experienced a disappointing market both in attendance and in buying. Retailers did shop the market carefully, noting new trends and cataloging key lines. Here is a capsule picture of what they found:

The new appliance, kitchen and dinette lines paced the industry in style and creative new ideas in designs and finishes. Wherever dinette sets were on display, or where

■ The fabric on this chair is treated with a stain repellent. All traces of liquid may be removed by blotting it up with a napkin.

appliances made their sparkling debut, news was being made. Interchangeable genuine wood door panels were featured on major appliances. Walnut, oak, birch, mahogany and knotty pine were some of the woods used. Slip-on panels, available in washable white plastic with free-form design, were found on some refrigerators; others showed doors with a base treated to accept any color paint or wallpaper.

The five decorator colors most commonly featured on electric ranges, refrigerators and freezers, as well as built-ins, were yellow, pink, turquoise, coppertone and brushed chrome.

Dinette Sets Shown in Many Designs and Finishes

Because the dinette set is the new "baby" of the industry and designed to fill a need created by modern housing, designers have not been stymied by tradition. Accordingly, each market finds the "baby" growing in beauty and practicability.

Since the dinette is used as part of a living-room dining-room grouping, in some instances, it is high style and decorative in appearance, designed to fit into the living room, yet practical and functional. On the other hand the dinette is used in the kitchen-dining room role, and there it is ingeniously designed to blend in with the kitchen decor.

In the living-room dining-room group we find tables with wood grain combined with inlays which resemble marble, crushed stone, fine metals, etc. Brass trim is used generously to give a decorator's touch and in one high-style line a small round dinette table in white and with gold trim had chairs inlaid with large jeweler-set stones. Anodized aluminum inlays were used in other decorator-designed tables.

Buffet-china ensemble of all steel with metallic bronze finish. Buffet top is of high pressure plastic in blond, walnut woodgrain or gold-white. The hardware and trim are brass. Cabinet has built-in cup hooks, spice shelf and quiet sliding doors. Shown at American Furniture Mart.

Chrome Early American dinettes in a provincial finish were news, as well as tables with ribbon-stripe tops of pearl and aqua or pink and pearl. Legs of "satin and silver" which were first brushed and then plated, rather than the traditional plating and brushing, were also a feature. The raised ledge on the kitchen tables, designed to prevent

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POLYMAC finished panels will be sent on request. When you write on company letterhead specify type of wood, stain, color and sheen desired.

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liquids from running onto the floor, was noted. Metal buffet-chinas, designed to accompany the dinette and kitchen sets, were small and compact, ingeniously designed to accommodate a maximum load in a minimum of space.

The compact commode, which doubles as buffet server or full-size dining table, is a further answer to the needs of the small living-room dining-room of the new homes.

A great deal of attention was focused on cabinets specifically designed to accommodate stereo and Hi-Fi units, as well as television sets, tape recorders, record players, etc. Shown with and without component units and designed for use in living room or dining room the cabinets ran the gamut of period and modern styling, cane being frequently used for door panels where speakers were to be installed.

A bedroom piece with multiple storage capacity. The center cylinder pivots around to close completely, making an entire fruitwood facade. The chest, with multiple uses, is 71-in. high, 22-in. deep and 41-in. wide. Shown at the American Furniture Mart in Chicago.

Natural Tone Finishes; Inlays; Expensive Woods; Bleaching

Finishes on furniture throughout the case goods lines were a paradox, and as unorthodox as the market itself. While natural tones continue to dominate the picture it now appears to the observer that manufacturers are in competition to see which one can make walnut appear more like mahogany, and mahogany like walnut. For example, a "Dark Toast" finish on walnut was tinged with red and the finished product so closely resembled a mahogany finish it needed a sign for identification. On the other hand, a "Thistle" finish on mahogany was a true walnut color.

In some high-style lines there was some experimenting with darker tones and such names as "dark espresso" identified brown mahogany suites. Oiled walnut, with ebony inlays used to accent the black tones, was repeatedly used. Many pieces had slate or black micarta tops.

In lines where the same group was shown in pumice or light faun, the faun was predominately the best seller. The same was true of any group where a light tone and a medium shade were shown. Painted suites continue to make a

soft enough to "baby" a baby grand

Sun Ray steel wool

During the critical oiling-off process on fine piano cases, The Baldwin Piano Company specifies baby-soft Sun Ray Steel Wool #0000 grade to bring out the rich glossy finish. For rubbing down all fine furniture, Sun Ray is the softest, finest steel wool available. Its long, uniform, resilient strands remove small scratches and impart a mellow smoothness to woods. Sun Ray's precision manufacturing and vigilant grading assure dependable steel wool quality for perfect finishes every time!

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bid for attention; also, wood suites with a few painted pieces added for accent. White and black, usually washed or flecked with gold and decorated with gold hardware, were most often seen.

More use of rare woods and flashy cuts, such as burls and swirls, was evident. These were combined with the more common cabinet woods. Table tops of "scrubbed" Brazilian Rosewood in one very high style line—the "scrubbed" look giving a dull, washed appearance—may be an arrow pointing to a coming trend. Teak, zebra wood, quilted maple and other decorative woods were used for front panels, tops and trims.

Considerable interest was focused on a new bleaching process used by a large manufacturer of Colonial and Early American furniture. The new bleach brings out the white in the wood and gives a clear luminous effect to the finished rubbed product.

Printed Finishes; Survey of Finishes During Five Years

Many types of laminates were shown on the top of tables and case pieces. One interesting new process, explained in detail by its creator, was a finish procured by the use of a diallyl phthalate impregnated overlay and similarly impregnated printed papers. The papers can be applied with presses that exert as little as 100 to 240-lbs. per square inch. The printed paper can be used to create an attractive and durable simulated wood surface on fairly inexpensive core material and the clear impregnated paper, laminated directly to the surface of a wood veneer, enhances the appearance of the wood as well as protecting it.

In a survey, released by a well-known manufacturer of finishing materials, of the changes in styles, woods and colors in the five years from 1955 to 1960, findings show that in June 1955, lighter than natural (mostly toner finishes) were used on 37.9% of the walnut bedroom groups and 41.8% of the walnut dining room groupings.

Near natural and deeper clear tones were used on 34½% of the walnut bedroom furniture and 39½% of the walnut dining room groupings. Just five years later, the 1960 survey found natural tones in clear finishes accounted for

Oak in a new faun finish is used to fashion this unusual dresser. Concave moulding on drawer edges serves as convenient pull for this double dresser. Note the unusual framed mirror. Shown at the Merchandise Mart in Chicago.

PERFEX SATIN FINISHES FOR CHAIRS

No Rubbing Needed!...

Many chair manufacturers are using Perfex Satin Finishes to secure that rubbed appearance and waxed feel – without the costly rubbing operation – and while Perfex Satin Finishes are ideally suited to chairs, *numerous other pieces of furniture are likewise candidates* for these labor-saving, time-saving finishes.

Perfex was the original "flat" to be made by a new and different process (without the use of stearates or flattening agents) and it is still the "flat" which comes nearest to producing an actual rubbed varnish appearance. It is the Perfect flat finish–quick set, quick dry, waterproof, liquor proof, good build, full smooth body, beautiful rubbed effect, smooth waxed feel. Available in a full range of sheens.

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PAINT AND COLOR COMPANY

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84.9% of the walnut bedroom groupings and 85% of the walnut dining room groupings. The survey also showed that in June 1955, 15.2% of the bedroom and dining room suites shown at the markets were in walnut and 34.6% in mahogany. In 1960, on the other hand, 27.9% were in walnut and only 15.1% in mahogany. Cherry which had 13.2% of the market in 1955 jumped to 19.7% in 1960.

Carved and Moulded Details; Stain Resistant Finishes

Modern, softened by carved details such as moulded drawers, sculptured details and inlays, reflected the gradual blending of the old with the new as grown-up contemporary takes its permanent place in furniture styling. The swing back to Colonial and Federal styling with a modern flare was also newsworthy.

Many of the upholstered lines stressed upholstery with special impregnated finishes which made them stain repellent. Occasional furniture also stressed the stain repellent feature.

Outdoor furniture, in a riot of color and in ultra modern design, used novel methods to emphasize its weather resistance and focus attention on its long wearing finish.

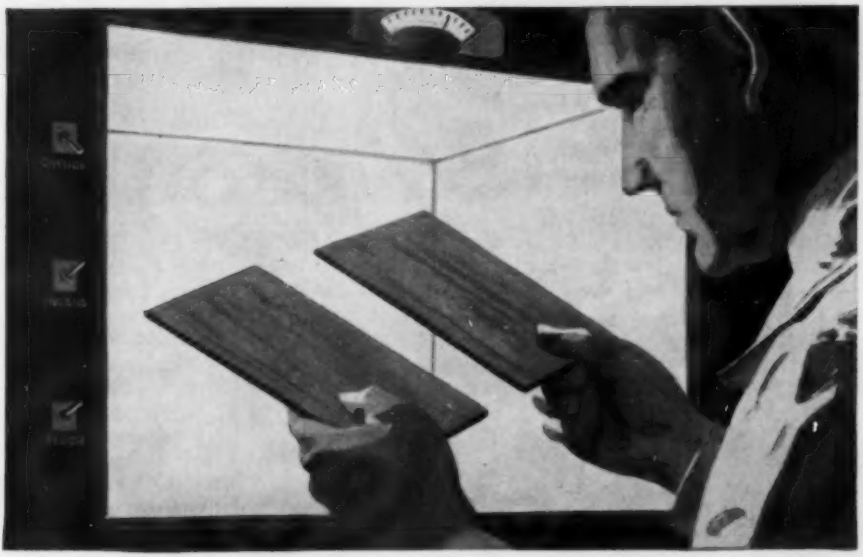
Colors on upholstered pieces and on dining room and dinette chairs and occasional pieces were always clear and bright. Purples and lavenders emerge as the newest darlings of the industry, and were teamed with all types of woods as well as with white and black. Second in importance were the gold tones which gave a rich accent to any pieces on which the covering was used. Beige and all shades of greens and blues were popular in that order.

Editor's Note: Another writer's observation: The design trends were about the same as has been shown during the past five years. The finishes tended to be slightly warmer and perhaps showing a bit more yellow than they have for the past two years. Wood finishes have a bit more sheen; the painted finishes have less sheen.

Dry Clime's Representative in New England States

Stuart Minard, of the New England Spray Equipment Co., Concord Road, Marlboro, Mass., has been appointed sales representative for the dri-Quik line of ceramic-type, electric, infrared, industrial drying ovens, manufactured by the Dry Clime Lamp Corp., Greensburg, Ind. Mr. Minard, who has had extensive training in the engineering of infrared oven applications, offers dri-Quik's complete free field testing service, with portable field test drying equipment brought into any plant upon request for in-plant demonstrations with the user's products and personnel.

In addition to driQuik infrared ovens, the New England Spray Equipment Co. carries a line of related finishing equipment and offers complete engineering and installation service.



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Wood Finish Originals

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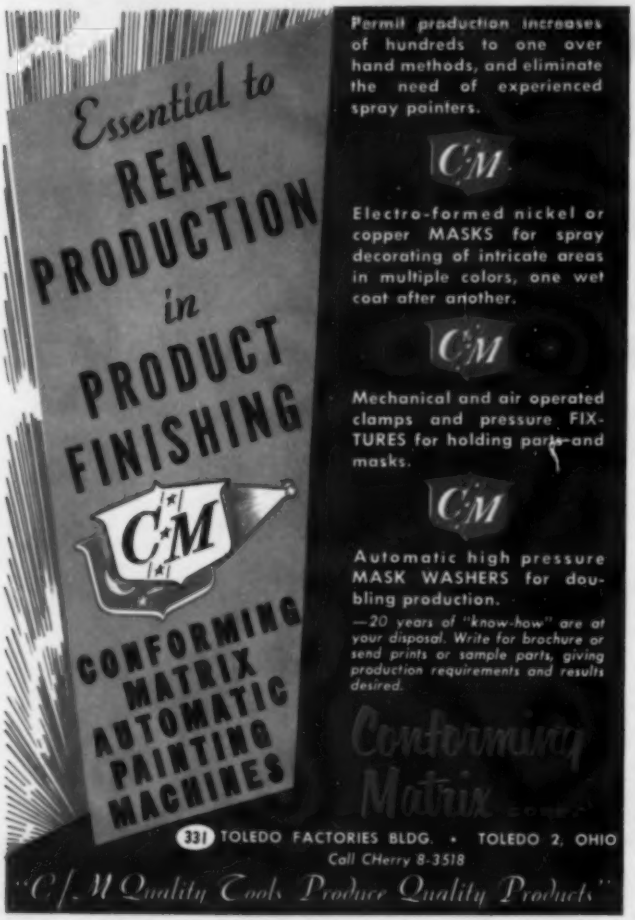
Hand Sanding Expensive But Still Necessary

HAND SANDING is expensive; it calls for the use of both labor and sandpaper. This applies to sanding surfaces in preparation for putting on the first coats, and the light sanding between coats.

There are portable sanding machines—both electric and air driven—that will do the job fast and use up all of the sandpaper with little effort on the part of the operator, except to guide the machine. Hand sanding demands much effort by the operator and, being a normal human being, he realizes that the longer the sandpaper is used, the more pressure is required, along with more time to accomplish a satisfactory job. The greater pressure exerted, the greater the physical effort becomes.

In many cases hand sanding encourages a waste of good usable sandpaper. Many operators will use only about half of a piece of sandpaper. Seldom does one find the edges of the paper used. This is understandable because using the edge area of the paper makes it more difficult to hold and requires more shifting of the paper in the operator's hand. The extra motions require time and will slow down the operation.

But we will never get entirely away from hand sanding. Final polish sanding of assembled wood products before they go to the finishing room requires a lot of hand sanding. Light sanding of the wash coat and sealer coat, as used in wood fin-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NEW

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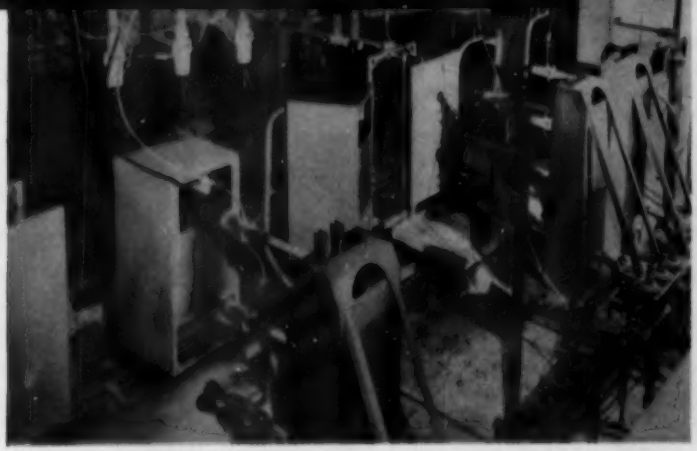

Ransburg's No. 2 Process moving bells —latest innovation in electrostatic painting—automatically paint mixed sizes of refrigerator cabinets and doors on Kelvinator's new finishing line.

On this job—first of its kind—limit switches re-position the reciprocating bells to accommodate various model sizes mixed on the same line. And, electric eyes selectively trigger the paint on and off between parts.

RESULTS? Automatic electrostatic spray painting—which replaced a battery of reciprocating automatic air guns —is providing Kelvinator with a beautiful, higher quality, and more uniform finish. Rejects, formerly a troublesome problem, have been practically eliminated. And, along with appreciable labor savings in this highly automated set-up, paint mileage is substantially improved . . . even bettering the savings indicated in pre-installation lab tests at Ransburg.

Like Kelvinator, other manufacturers of quality products will find Ransburg's moving bells the automation answer for production lines where batching of similar parts is impractical.

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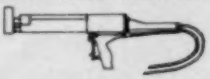
NO REASON WHY YOU CAN'T DO IT, TOO!

Want to know how Ransburg No. 2 Process can improve the quality of YOUR painted products—and at the same time—cut YOUR paint and labor costs? Write for our No. 2 Process brochure. Or, if your production doesn't justify automatic painting, let us tell you about the No. 2 Process Electrostatic Hand Gun which can be used in either conveyorized, or non-conveyorized painting.



RANSBURG Electro-Coating Corp.

Box 23122, Indianapolis 23, Indiana

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ishing, nearly always calls for a hand operation. Likewise the scuff sanding of a prime coat in metal finishing is done by hand. These jobs are, you might say, unavoidable.

Not too much can be done to control the time factor except to choose operators who are fast and adept at sanding. Reasonable rules, based on the production rate can be established on the amount of use to be made of each sheet of sandpaper before it is thrown away; say for instance, the operator must use at least three fourths of each sheet of sandpaper. These things may help to hold the line on manufacturing costs; however, hand sanding should be avoided whenever possible.—*B. J.*

E. H. Ott, Dir. of Research For Grand Rapids Varnish Corp.

Mr. Wayne R. Fuller, recently made Consultant in Research at the Grand Rapids Varnish Corp., has completed his 20th year with the company. He will continue in an active relationship with the research department. Mr. Fuller has been succeeded by Eugene H. Ott, recently appointed as Director of Research. Mr. Ott has been active in the technical and manufacturing phases of the paint industry for 24 years. He was formerly with a well known company in Cleveland, Ohio, where he is concluding an association of 23 years.

Eugene H. Ott

The assignments which Mr. Ott held with the Cleveland, Ohio, organization included formulation of industrial enamels and primers, technical field service, Director of Resin Research, etc.

Mr. Ott is President and Chairman of the Board of Directors of the Federation of Societies for Paint Technology. His other professional affiliations include membership in the American Chemical Society, with special interest in the division of polymer chemistry and the division of paint, plastics and printing ink chemistry. He is also identified with the American Association for Advancement of Science.

Quigg Lohr Elected a V. P. of American Monorail

Quigg Lohr has been elected a V.P. of the American MonoRail Company, Cleveland, Ohio, as the latest promotion in a 20-year career there, according to an announcement by President John L. Pischke following the recent annual Stockholders and Directors meetings at the general offices, 1111 E. 200th St., Cleveland.

The new V.P., a native of Cleveland, joined MonoRail in 1941. Lohr was named Assistant Secretary of the firm in 1944, a Director in 1956, and Secretary two years ago. He continues as Secretary and a Director.

Lohr is President of Canadian MonoRail Ltd. and chief executive officer of this wholly owned subsidiary which moved into a new 12,000-sq.ft. plant at Brampton, Ontario, early in January of this year.

J. Holland & Sons, Inc., Elects New Slate of Officers

A new slate of company officers is announced by J. Holland & Sons, Inc., 475 Keap St., Brooklyn, N. Y. The firm distributes machinery and supplies to the metal finishing industries and manufactures many types of equipment under the Holland name. Recently inaugurated was a subsidiary organization, H & S Equipment Sales Co., Inc., for the sale of rebuilt machinery to the same industries served by J. Holland & Sons, Inc.

Louis Holland has been named president, and William Holland has been elected treasurer. Arthur Holland, Mr. William Holland's son, is now Secretary. Elected Vice President was Mr. Abraham Polmar who joined the J. Holland organization in 1933.

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Lincoln's "No-Air" Dyna-Spray System cuts cost in applying paints and other industrial finishes. No atomizing air or material heating is needed. The paint is supplied direct from a 5- or 55-gallon container by Lincoln's Power-Master pump. The Dyna-Spray gun lays an even coating, reduces overspray and bounce-back, and frequently eliminates the need for a second coat. This simple, trouble-free airless hydraulic unit (Model MD-81, illustrated at right) costs less than $500.

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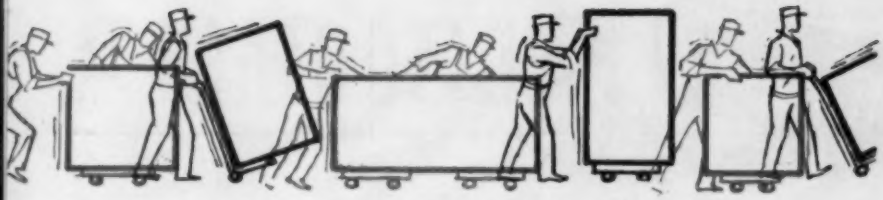

77 million

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EDITORIALS

Needed Pride in Workmanship

★ The majority of the finishing departments throughout the country have mechanized their finishing process to a great extent. That is, they have installed conveyor systems and the best in spraying equipment; the lighting is excellent; they spare no effort in putting in such things as replacement air and they keep the working areas clean.

However, none of this fine equipment or mechanized finishing will produce quality finishes by itself. It requires not only skilled workmen but operators who pay careful attention to their work. Pride in workmanship must always accompany the high degree of skill in finishing or in any other skilled work. It is this pride in workmanship that transforms the skilled craftsman into a quality workman.

Where a workman has no pride in his workmanship, it is very difficult for him to do efficient quality work.

During the past two decades, industry has seen an extremely pronounced growth of competition and improved product quality. More emphasis is being placed on quality than ever before in the industrial field. All indications are that this concentration upon quality is growing rather than lessoning in the present period. Reputation for quality, whether good or bad, is not a mere creature of chance; it is the direct result of fine workmanship performed by men who take pride in their craftmanship.—*H. W. Chester.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

More Prefinished Sheet Metal is Being Used

A definite trend by manufacturers, especially among smaller operators, is to use prefinished aluminum and cold-rolled steel to produce products ranging from awnings to airplane hangers. Both metals are available in coiled strip or cut to individual size sheets with the same or different colors on each side.

Several good reasons are responsible for the popularity of prefinished sheet metal. First, it is economical; 2) all or a major portion of the finishing problems are removed at the fabricator's plant; 3) it is produced in solid colors or in fine wood grain, marble,, textile, leather or other designs; 4) it is available in many different coating materials suitable to forming or embossing the finished metal without chipping or marring the finish, and to suit the end use of the product.

Thus, insofar as the finish is concerned, the smaller plants receive all of the benefits of the testing laboratory, skilled quality control personnel, accurately controlled surface prepara-

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Metal Caskets at Aurora Casket Co.

finished in 1/4th previous time

with the help of driQuik INFRA-RED OVENS

Until recently, caskets were moved on pallets and air drying was the practice. In the modernized plant at Aurora, Ind., now, with automatic conveyors and driQuik ceramic type electric infra-red ovens: 1. the complete finishing operation, from base coat to final lacquer, takes much less space; 2. production was increased 20% with less labor cost; 3. quality was improved. Only driQuik, with its accurate temperature control (to within 1 degree of desired heat by turning a knob) can give the correct temperatures for each of the different coatings. No bulbs, quartz tubes, rods or sockets to burn out and need replacement. Write for FREE field demonstration in your plant.

driQuik DIVISION DRY CLIME LAMP CORP. GREENSBURG, INDIANA

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tion, high quality application and baking of the finish—all of this at a cost much below what it would cost them to put on a finish of equal quality. In fact, many of the smaller operators could not afford the capital investment nor operating cost of applying a finish that is equal to the finish on prefinished aluminum or steel. Volume production plus automatic finishing holds costs down, while precise, effective controls insure a uniformly high quality coating on prefinished metal.

1961, Gold-Plated Year

★ The emphasis has shifted from pinning all of industry's hopes on greater volume—where the finishing department could be only indirectly helpful—to planning for better quality and better net income.

Through time-saving and money-saving methods and equipment, the finishing department has its best chance of gaining in prestige during 1961.

It's too fine an opportunity to be passed up, especially since it may require little more than the time to study this magazine thoroughly—including the advertisements.—*George M. Dodson.*

E. C. Baldwin, New President of Sherwin-Williams Co.

Arthur W. Steudel, president of the Sherwin-Williams Co. since 1940, has been elected Chairman of the Board and chief executive officer of the company. The post has been vacant since 1944.

Named to succeed Steudel as president was E. Colin Baldwin who, for the past year, has been V. P. and general manager of the firm. Announcement of the elections was made by the board of directors following the annual meeting of stockholders in Cleveland. Mr. Baldwin is 52 years old.

H. R. Lillie, Dir. of Tech. Service For G. R. Varnish Corp.

Howard R. Lillie

Howard R. Lillie has been appointed Director of Technical Service for the Grand Rapids Varnish Corp. Mr. Lillie joined the company in 1949. His assignments have included laboratory research and development work in finishing materials for both wood and metal, and later an assignment in the Technical Service Division where his contacts have been with the users of materials for the coating of both wood and metal products.

The appointment of Mr. Lillie as Director of Technical Service comes as a promotion within a division where he has proven his worth and ability. Mr. W. E. Martin, whom he succeeds, has served in this capacity for 29 years. Mr. Martin now becomes a Consultant in Research where he will be active in the development of long range projects in the coatings field.

DeVilbiss Spray Painting School Offers Specialized Training

The scope of instruction provided in a single DeVilbiss week-long spray painting school is indicated by the diversity of the trades represented by the students.

In attendance at a recent industrial products finishing school were representatives of firms producing reflectorized signs for highways and other uses, deluxe mailboxes, caskets, boats, kitchen cabinets, stoneware, chemicals and automotive parts.

All took the same course; all expressed satisfaction with the training received, and returned to their companies prepared to improve the finishes applied to their products or to better utilize spray painting equipment.

The 5-day DeVilbiss Co. factory school covers both theory and practice, so that each student is able to review the fundamentals of spray painting, the uses of the equipment, and to explore the particular problems of his industry or company. There is no tuition or charge for the school. Students pay their own travel and living expenses, of course.

DETREX 910

DOES IT WITH BOTH BARRELS

Here's a new approach to iron phosphate coating.

Detrex 910 chemically cleans and phosphate coats in one operation. It is designed for use in continuous mechanical spray washing equipment ranging from a 2 to a 6 stage operation.

ARE YOU IN A HARD WATER AREA? This field tested and fully guaranteed product is so compounded that it will accept at least fifteen times more alkali than other products and still remain in the PH coating range to produce superior iron phosphate coating. This unique alkali tolerance permits Detrex paint-bond 910 to be used in practically all areas of the United States without special PH control.

It's a "double-barreled" advancement that can mean important savings to you. Our field engineers will be glad to furnish the details.

DETREX CHEMICAL INDUSTRIES, INC.

P. O. Box 501, Dept. IF-261, Detroit 32, Mich.

For more data, circle 190 on colored card.

Left: The color coat for a boat hull to be molded is sprayed over the mold surface before work on the hull begins.

Below: One operator uses a floor gun to spread catalyzed resin over and into the fiberglass mat while others use hand rollers to press the impregnated fiberglass firmly into the mold and to roll out all air bubbles.

Right: a fiberglass boat hull being removed from its mold. The color, sprayed over the surface of the mold (above) is now part of the boat hull which has a glossy smooth finish.

FIBERGLASS BOATS
are painted before they are made

By D. E. Pinyan, Plant Superintendent
Atlanta Boat Works*

IT MAY SOUND paradoxical, but Aristo-Craft Funliner fiberglass boats *are actually painted before they are built.* How? The colors are moulded right into the fiberglass itself. Boats are produced in 2-tone blue and white, red and white, black and white and in all green and all blue. Special colors are available on order. The entire boat, including its top and seat frames, is made of fiberglass with a clear plastic wrap-around windshield.

Five different molds are used in the completion of a boat—the hull, deck, floor board, top and seat frames. These molds are constructed of fiberglass also, and the hull and deck molds are reinforced with steel for rigidity because of their size. After the molds have been made with molding surfaces mirror smooth their surfaces are waxed and polished. This waxing and polishing is done to make it easy to separate the casting from its mold. After a molded part has been removed from the mold, the inside surface of the mold is carefully wiped clean; and after ten parts have been molded the interior surface of the mold is again waxed

*665 Pylant St., N. E. Atlanta 6, Ga.

Final assembly and up-fitting line where mouldings, steering wheels, windshields and upholstered seats are installed. Boats move in progressive stages from left to right.

and polished to aid in releasing new molded parts from the mold.

Color is Molded Right Into the Fiberglass

Regardless of the part being molded, insofar as color is concerned, the procedure is the same. Let us follow a boat hull casting step by step. The hull mold is mounted on a portable cradle which is center suspended so that the mold can be tilted 90° either way —to left or to right.

In the 50-ft. long spray booth the first operator sprays the entire inside surface of the mold with a pigmented polyester-resin-base material plus a methyl ethyl ketone peroxide catalyst and an accelerator which is added to the resin. The pot life of the resin, plus the accelerator, is four to five hours, but with the catalyst added, it is reduced to 15 minutes. The accelerator is used for high speed production. (This is the color coat for the outside of the boat hull.)

To make these materials and the process practical for continuous production, we use a special metering device which accurately measures the exact amount of catalyst to be added to the resin and accelerator. We use a special catalyst spray gun which enables us to spray the resin and catalyst from separate pressure tanks. The short pot life, therefore, is no problem. The fluid pressure of the pigmented polyester - resin - based material is 80-lbs.; fluid pressure of the catalyst is 40-lbs. Atomizing pressure is 65 lbs.

Pigmented polyester resin base material, plus an accelerator, is in the large pressure tank. The catalyst is in the smaller tank at right, just outside the spray booth. On the wall of the booth is mounted the metering device which measures the correct amount of catalyst to be delivered to the special catalyst spray gun. Other pressure tanks contain different colors of polyester resin base material. Photograph, courtesy The DeVilbiss Company.

Fiberglass Mats are Laid in the Mold

The color coat on the inside surface of the mold is allowed to flash-off (air dry) for ten minutes before the first cut-to-size fiberglass mat is laid in the mold. This fiberglass mat is white and thin, 1/16-in. or less in thickness, with hairlike fibers running in every direction. The next operator applies a heavy spray coat of polyester-base material plus accelerator and catalyst onto the fiberglass mat.

After the fiberglass mat is completely saturated with resin, the mat is manually rolled with mohair

Secret Ingredient
REVEALED!

Don't tell our competition, but
the secret ingredient compounded into
every Egyptian Finishing System is . . .
"The Urge to Serve."

The next time you have a finishing
decision to make, call on the experience,
the knowmanship . . . the eagerness to serve
that permeates the entire Egyptian family.

Whether yours is a run-of-the-mill
problem or a real toughy, you will find
Egyptian's secret ingredient . . .
"The Urge to Serve," real easy on the nerves.

To-day is a good day to invite an
Egyptian Finishes Specialist in to see
you. No obligation of course.

EGYPTIAN

Chemical Coatings

THE EGYPTIAN LACQUER MANUFACTURING COMPANY

BOX 444, NEWARK 1, NEW JERSEY

Executive Offices: Rockefeller Center, New York · Plants: So. Kearny, N. J.; Lafayette, Ind.

For more data, circle 191 on colored card.

and metal rollers to press it into close contact with the mold and to release all entrapped air between the fiberglass and the polyester surface coat which covers the mold.

On boat hulls we use two mats and a heavy woven fiberglass blanket. (This woven blanket is thin but it has very long fibers which are woven to give it great strength). An additional mat or mats can be applied as needed. For other parts of the boat three mats are used. Each mat is applied in the same manner; also, the woven blanket; the air bubbles are rolled out right after the clear resin and catalyst are flowed onto the surface.

Each station where mats and blanket are applied is equipped with a catalyst measuring device so that the correct amount of catalyst will mix with the resin as it flows onto the surface of the mat. After a final 30-minute curing period, the hull is removed from the mold by means of electric hoists. Before work begins on a new hull the mold must be sprayed again with color. This color will transfer itself to the outside of the molded boat hull while the latter is in the making.

Mold Determines the Type of Finished Surface

The deck mold is made so as to produce a non-slip surface on the forward part of the deck. After removal of the deck from its mold a wood rib reinforcement (the only wood used in the boat) is cemented to the underside and is then completely covered and reinforced with fiberglass mats applied with resin and catalyst. The wood merely forms the core. Fiberglass mats are used to seal air into the fins to form permanent air chambers on both sides of the boat to promote buoyancy.

The top mold is made in two pieces—male and female. This is necessary to produce a high gloss finish on the outside of the top and a non-reflective finish on the inside to reduce glare. The inside surface of the mold determines the type of surface that will be produced in the finished part—just as different colors sprayed on the mold interior determine the color of the molded part.

As the hull proceeds along the line, the deck is sealed on, then the fiberglass (level) floor is sealed in with resin coated strips of fiberglass. After 15 minutes setup time the entire interior of the hull is given a spray coat of beige lacquer.

Extruded aluminum mouldings are applied over all raw edge seals. Then the steering wheel, clear plastic windshield and waterproof vinyl-upholstered seats are installed.

Four 4000-gallon underground tanks are used for bulk storage of polyester resin and solvent. The catalyst and accelerator are delivered in smaller containers to comply with fire regulations.

Silicone Rubber Cement. An improved adhesive system for bonding silicone rubber to itself or silicone rubber to glass, Dacron and Nylon fabrics has been developed by The Connecticut Hard Rubber Co. of New Haven. This adhesive is also used for bonding silicone rubber to metal, plastics, glass and ceramics with the aid of Cohrlastic C-260 Metal Primer.

The Interlox line was developed to give you a better, lower cost, easily controlled phosphate coating. Its exceptional cleaning ability combined with a radically different type of accelerator produces an even, fine grained, dense coating which locks your organic finish to the metal.

Interlox eliminates streaks, stains, powdery deposits, and flash rusting, giving you the ultimate in appearance, adhesion and resistance to humidity and salt-spray.

Additional cleaning power is easily obtained, when desired, by the addition of a low-cost detergent only, thus avoiding the danger of over-phosphatizing and the costly practice of adding complete phosphatizing compound when only cleaner is required.

There is an Interlox product developed to meet your particular need whether spray or immersion type, single or multiple stage. Interlox baths are unusually long lived and require less additions and control.

Licensed Manufacturers { **Alert Supply Co., Los Angeles, California**
Armalite Company, Ltd., Toronto, Canada

NORTHWEST CHEMICAL COMPANY
5310 ROSELAWN **DETROIT 4, MICHIGAN**

For more data, circle 192 on colored card.

LETTERS from READERS

Grained Decal Films

We noted with interest an inquiry in Nov. issue, page 90, relating to grained decal films and the suppliers thereof. We, too, are interested in learning the sources for such decals and would appreciate your furnishing this information at your earliest convenience. At the moment we are primarily interested in such decals in both wood and marble effects for application to gypsum cement surfaces. —*Studio 7.*

In a letter we are giving you the names and addresses of suppliers.—*Editor.*

For Matching Colors

I noticed in Dec. 1960 issue, in the "Letters from Readers", a reader asked you for literature and other data on standard light boxes that are made for matching colors. Please forward us the names and addresses of concerns that can supply these boxes. —*G. L. Co.*

Information furnished.—*Editor.*

Lacquer for Silver

Can you give me the address of a company that puts up, in aerosol bombs, a clear non-tarnishing lacquer to go over silver or brass? If there is not a manufacturer that packs it in this method, can you give me the address of a few companies who make this finish?—*W. E. B.*

We believe you can obtain what you want in aerosol cans. In a letter we are naming a possible supplier.—*Ed.*

Resin in Polyester Finish

Please forward additional information about the resin described in the article entitled, "The Polyester Finish", which appears in Oct. 1960 issue, starting on page 50. I am chiefly interested in knowing the identity of the supplier, so that further inquiries can be made.—*M. & M.*

In a letter we are giving you the names and addresses of three possible suppliers.—*Editor.*

Yes, Self-Highlighting Finish

In the Jan. 1961 issue, on page 82, the C. C. Co. inquired about a self-highlighting finish for crucifixes.

This can be done by applying a heavy wet coat of a transparent black varnish made by mixing an oil-soluble black dye in a clear varnish. Oil soluble black dyes can be obtained from Dupont, Dyes & Chemicals Division, Wilmington 98, Dela., or American Cyanamid Co., Dyes Department, Bound Brook, N. J.

The colored varnish should be well diluted and applied liberally to allow

FAST STRIPPERS

- ✓ **FAST, CLEAN WORKING**...unlike caustics or strong acids, these strippers do not dissolve or decompose enamel or lacquer. These strippers break the bond between the metal and the organic coating. Loosened coating then slips off in sheets or shreds.
- ✓ **NON-CORRODING**...our strippers do not attack aluminum, zinc, ferrous metals or any other metal or alloy.
- ✓ **CONVENIENT**...stripped metal may be rinsed with water, dried and refinished immediately.

LEA COLDSTRIP

1. Requires no dilution. Use full strength.
2. No heating required. Use at room temperature.
3. Although toxicity is low, care should be taken to avoid contact with the skin.
4. Minimum ventilation required.
5. Can be strained for continued use.
6. Surface of Coldstrip is self-sealing (reduces evaporation).

LEA SYNSTRIP

1. May or may not be diluted with water, depending upon the film adherence.

Maximum dilution should be 1 part Synstrip to 6 parts water.

2. Can be used cold or heated. Heating to temperature from 160° to 200°F. cuts stripping time.
3. Toxic. Avoid inhaling or contact with skin.
4. Heated solution requires ventilation to remove fumes.
5. Can be strained for continued use.
6. Evaporated water should be replaced to maintain concentration. Baumé readings on a hydrometer will determine the amount of water to add.

LEA

The Hallmark of Quality Products

Send for complete technical information on the fast working strippers.

THE LEA MANUFACTURING CO.
16 CHERRY AVE., WATERBURY 20, CONN.

Lea-Michigan, Inc., 14459 Wildemere Ave., Detroit 38, Mich.
Lea Mfg. Company of Canada, Ltd., 1236 Birchmount Rd., Scarborough, Ont., Can.
Lea Mfg. Company of England, Ltd., Buxton, Derbyshire, England
Lea-Ronal, Inc., Main Office and Laboratory: 139-20 109th Ave., Jamaica 35, N. Y.
Manufacturing Plant: 237 East Aurora St., Waterbury 20, Conn.

For more data, circle 193 on colored card.

flowing off the high spots into the recesses. The solvents in the varnish should be petroleum naphtha or xylene to avoid attacking the lacquer film.—*B. V. McBride, Materials Laboratories, Westinghouse.*

"He's versatile, all right. He's the only spray man I know who can get fat edges, bald spots and orange peel all on one item."

Tumbling Equipment

We note on page 79 of Dec. 1960 issue, that someone asked about a source of tumble finishes.

We are not interested in finishes, but we do want to learn about sources of equipment for tumbling small parts such as nuts, bolts, screws, nails, etc. Would you please send us suggested sources for tumbling equipment, and also include your reply to "CWM" concerning tumbling finish sources.—*A. M. Co.*

In a letter we are giving you names and addresses of several manufacturers and suppliers of tumbling equipment.—*Editor.*

Rubbing Compound Wanted

We are interested in getting the name and address of a manufacturer or manufacturers of rubbing compounds, in connection with the rubbing out and polishing of both lacquer and synthetic finishes.

We want to contact a manufacturer of rubbing compound that can provide this item in several types, as desired for this purpose—one who is currently supplying this specialty product in cans or bulk lot as private label material.—*H. C. & Co.*

Some of the finishing material concerns can supply rubbing compound. Other names and addresses are being sent to you by letter.—*Editor.*

Padding in Filler Fast

In Oct. 1960 issue, page 66, in the article, "The Use of Fillers for Wood Finishing", I noticed a power driven pad being used to pad in the paste filler.

We are interested in obtaining, for one of our customers, a manufacturer's or dealer's address, as they are interested in obtaining such a machine with a view to up-grading their finished cases.—*C. P. I.*

The machine illustrated is a product of N.A. Strand Flexible Shaft, Inc., 601 S. Washtenaw Ave., Chicago 12, Ill.—*Editor.*

Blast-Cleaning Finish From Furniture

One of our customers has made reference to an article which appeared in *Industrial Finishing*, Nov. 1960 issue, under Questions and Answers, pages 100 to 104. This article had

reference to refinishing furniture by the sandblast method. We would like to receive a copy of this issue if it is possible, and we express our appreciation for your cooperation.—*P. K. Co.*

We are sending you tear sheets of the article, and suggest that for additional information you contact Pruden Tool Co., 415 W. 55th St., New York 19, N. Y.—*Editor.*

"...then I cut advertising costs by 35% in 1957, 65% in 1958, 85% in 1959 and 100% in 1960, when my plant went bankrupt!"

Continuous Strip Coating

We have seen, in your Dec. issue, page 80, that a firm in Madrid, Spain, is interested in continuous strip coating. Please, would you let us have their address as we have a plant very similar to the Colorweld Line belonging to Reynolds (published in Oct. Issue).—*Coated Strip, Ltd., England.*

In a letter we are giving you the full name and address of the Spanish concern.—*Editor.*

Maybe We Can Help Them

Would you please forward to us the complete name and address, and person to contact, in respect to the following letters from readers appearing in the Nov. 1960 issue of *Industrial Finishing?*

1) H & C (Cork Ireland), "Color Matching Article," page 90.

2) EGH, "To Apply Liner Coatings", page 92.

3) EA, Milano, Italy, "Automatic Spraying", page 94.

We believe that we can be of assistance to the persons making these requests and wish to thank you for your cooperation.—*Spraymation, Inc.*

In a letter we are giving you complete information on each of the above.—*Editor.*

Automatic Spraying

On page 94 of Nov. 1960 issue, we notice a letter from "E. A., Milano, Italy", expressing an interest in contacting an American firm who are manufacturers of automatic spray equipment. We would appreciate your giving us the full name and address of this individual or company, as we would like to get in touch with them in connection with their injuiry.—*The DeVilbiss Co.*

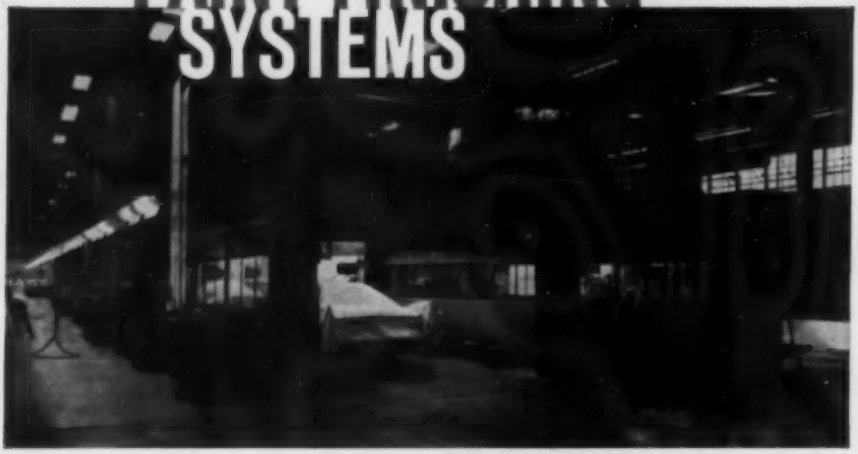
Information supplied.—*Editor.*

Fishing Lure Paint to Glow in Dark

Attention Mr. Karl Schreiber: We read with interest your article in a recent issue of *Industrial Finishing* in regard to phosphorescent material that could be used on fishing lures (Dec. 1960, pages 92-93). We have

ROSS

COMPLETE PAINT FINISHING SYSTEMS



Everything from METAL CLEANING through DRY-OFF on to FLOW COATING into SOLVENT VAPOR ENCLOSURE to FLASH OFF into PRIME COAT BAKE OVEN on to FINISH COAT then to FINISH COAT BAKE OVEN into COOL on to INSPECTION

The whole system is an engineered combination of the most modern ROSS components including metal preparation units, spray booths, flow coat units, dry-off ovens, air make-up units, air heaters, conveyors and air conditioning units. Now, a single responsibility for the entire system—engineered, designed, constructed and erected by J. O. Ross Engineering. For more information send for Paint Finishing Bulletin No. PF 401.

J. O. ROSS ENGINEERING

A Division of Midland-Ross Corporation/730 Third Ave., New York 17, New York

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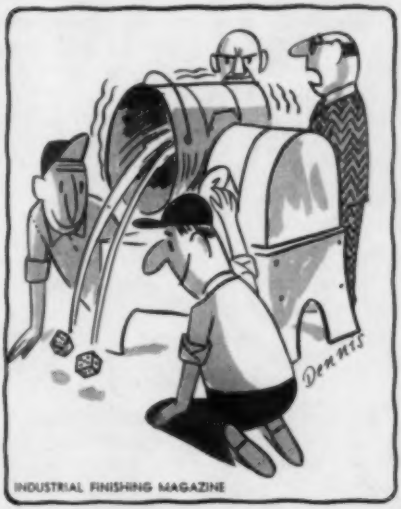
For more data, circle 194 on colored card.

often had inquiries regarding such a material, but we have never known of it being obtainable. Would you kindly give us the names and addresses of such manufacturers, so that we may write them direct?—*W. E. Co.*

In a letter we are giving you names and addresses of several concerns who should be able to supply what you want.—*Editor.*



"If they want to shoot dice on their lunch hour, I can't stop them."

Air-Dry Enamel Wanted

We will appreciate it if you will let us know whether, in your opinion, any of the fast air-dried enamels now on the market are comparable with a baked-on enamel, considering hardnesss, adhesion, gloss and cost?—*E. Mfg. Co.*

To any manufacturers interested in this inquiry, we will be glad to reveal this firm's name and address.—*Editor.*

Rubber Printing Rolls

We are looking for a supplier of rubber rolls, such as those used in flexographic printing. We want rolls that are resistant to toluene (toluol). We would prefer rolls that do not swell when exposed to common solvents, such as esters and ketones, but would settle for rolls that are resistant to toluol, even if stronger solvents do affect them.—*P. M.*

In a letter we are naming a few concerns who may be able to supply you.—*Editor.*

Paint For Window Glass

We get some jobs that require the painting of window glass to eliminate sun-glare. It is our policy to wash the interior of the glass with alcohol, then apply a coat of alkyd flat or undercoater. We have used a material called ——— but have had some of it peel and flake loose. In some locations, condensation is a problem. Would you please suggest a material or method to help solve our problem?—*C. I. M.*

In a letter we are giving you names and addresses of several concerns that can supply "non-glare" tinting paint for window glass exposed to the sun.—*Editor.*

Polyester Finish on Wood

In the Nov. 1960 issue, page 76, we see an article entitled, "Uses Polyester Finish on Wood Furniture", by H. W. Chester.

We are wondering if it would be possible for you to furnish us with the name of the firm using this particular wood finishing process? We

too, at this time, are conducting experiments for the finishing of wood and wood products.

We are interested in acquiring any and all information which might aid us in our future experimentation.—*Chemical Division of General Mills.*

Information supplied.—*Editor.*

Static From Sanding Attracts Dust

In the Dec. issue, page 39, we came across a very interesting article about dust problems in the finishing of wood furniture.

We would like to learn more about this solution to a very large problem. Is the equipment available commercially, and if so, please advise us to whom we might write.—*P. D. Co.*

Referring to Mr. Bardin's article in Dec. 1960 issue—the one entitled "The Static From Sanding Attracted Dust: Remedy", will you please let us know whom to contact regarding a potential purchase of these ionized air blow-off guns?—*H. I. O.*

In that same Dec. issue, page 52, there is an advertisement showing just what you are looking for. Be sure to look over the advertising in every issue. It contains timely and valuable information for all of us.—*Editor.*

Non-Yellowing Furn. Finish

We note with interest in the "Letters From Readers", page 78, an inquiry about a non-yellowing furniture finish from the C. Furniture Co., Puerto Rico. Inasmuch as we have a representative in Puerto Rico and are able to supply such a product, we would like to have the full name and address of this company.—*Coast Paint and Lacquer Co.*

We too manufacture non-yellowing furniture lacquers. May we have the full address of "C Furniture Co., Puerto Rico" so that we may acquaint them with those products of our manufacture, that would be most useful under their conditions of use?—*Comet Chemical Co., Inc.*

The full name and address of the Puerto Rico firm is being supplied by letter.—*Editor.*

Flock Adhesives

Please send information on flock finishing adhesives for use on A-grade leather.—*P. J. B.*

In a letter we are giving you the names of several suppliers.—*Editor.*

Non-Stain Masking Tape

In Dec. 1960 issue, page 79, regarding non-staining masking tape, we would appreciate your furnishing us sources of supply for this tape.—*T. Mfg. Co.*

Information supplied by letter.

Wet Paint Thickness

We would be glad if you would tell us the name of the manufacturer of the device for measuring wet film thickness, which was described by C. R. Brown on page 71 of August 1960 issue. Thank you for your assistance. —*F. D. S., London, England.*

It's a product of Nordson Corp., 55 Jackson St., Amherst, Ohio.—*Editor.*

QUESTIONS and ANSWERS

One-Coat Spray Finish For Furniture

We are looking for information pertaining to the one-coat spray technique as applied to furniture. The finish we are seeking will preserve the beauty of the wood and at the same time do the job of a multi-coat operation.

We would also like to be advised of the merits of an airless spray as compared to a vacuum spray.—*T. C. C.*

We know of no one-coat finish that will produce the same results as a multi-coat finish. Much depends on the specie of wood used, the type of product and the finish desired. Practically all woods must be stained; some species require filling; others, such as maple and birch, do not require filling. There are many things that would have to be known to give you an intelligent answer to your question.

Perhaps you have heard something about the polyester finish. This might be suitable for certain products. However, this is an expensive finish and one that requires a great deal of experience, on the part of workmen, to get good results. For your information, we are enclosing tear sheets of an article that appeared in the October issue of *Industrial Finishing*. We advise that you talk the matter over with your supplier of finishing material.

The chief merit of hot airless spray painting, as compared to compressed air spraying (there is no such thing as vacuum spraying), is the possibility of reducing to a minimum, if not preventing entirely, any overspray. This helps to save paint and solvent —and, through the use of heat, you have better viscosity control. If you will contact any advertiser of airless spray equipment in *Industrial Finishing*, the company will be glad to demonstrate its equipment on your particular product.—*P. C. Bardin.*

It would seem to me that you have reference to one of several newer materials—polyesters, an urea-alkyd catalyzed type of material, or possibly one of the epoxies. Polyesters have many definite merits, with some disadvantages. However, these objectionable features will probably be overcome in time.

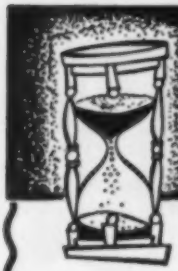
The catalyzed urea-alkyd materials are widely used. The film is flexible and tough. While it is sensitive to water and moisture, after aging for several weeks water spotting recovers quite well. On light colored woods it is not so serious, but on dark woods like oak, walnut and mahogany, this may be a problem. The clear gloss performs better than the semi-gloss in this respect. It is possible, with cold spray, to apply 40% to 45% solids, as against 20% to 30% cold with nitrocellulose. Elevated heat is another matter.

Epoxies could well be the answer, but here you are confronted with a slower drying film, the use of a double-headed gun, careful control of

product used and exact manipulation of the spraying process. I would investigate epoxies.

All three of the above named materials are catalyzed, and have more or less limited pot life. All of them have sufficient build so as to overcome the grain raising, at least most of it. Probably they all should have a sealer coat; that may be eliminated, but only on the recommendation of the paint manufacturer. They can be rubbed out to gain a desired luster. The polyester finish will most likely be rubbed by machine.

The data you have supplied is very meager. The first question is, what kind of wood? The next question, what is the end use? And what color and luster are sought? The only safe way is to call in the industrial salesman (more than one if desired) and pose the complete problem; get his solution and inquire as to any possible suggestions. Please bear in mind that the three suggestions given here



when time is a factor
...and when isn't it?

whatever your purpose...
whatever your problem...

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LANDAU custom makes the finish for every product—for every purpose. Consult with our Research Staff for advice on Special Finishes or any finishing problem. Tell us your problem and specifications and we will submit a sample of the Finish best suited for your purpose.

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CARLSTADT NEW JERSEY

For more data, circle 195 on colored card.

are not the only ones. There surely must be others. These are the ones that occur to me right now.

Now as to airless spray and vacuum spraying, you must mean compressed air spraying. Airless spray is relatively recent, is well accepted and is successful. It can be used either at room temperature or at elevated heat. In the case of catalyzed materials, any excessive heat would certainly complicate the spraying and pot life. The merits of airless spraying briefly are less overspray, getting all of the sprayed material on the work, and a heavier deposit of film. Much higher pressures are employed. The tank pressure of say 100-lbs. per square inch is boosted up to anywhere from 600-psi. to even 3000-psi. This insures turbulence in the mixing chamber and complete atomization. It is a proven successful process.—*C. R. Brown.*

In Europe a single-coat system of applying polyester, that has color incorporated in it, has found some popularity. This system has been successful only on flat surfaces that can be finished by a method similar to roller coating or curtain coating. Since much of the European production type of furniture is finished before assembly, such a system can be used.

In this country, the system has not caused much of a "flurry" for a number of reasons, the main one being that the public demands more depth of color than it is possible to achieve with the one-coat system. To gain color depth, different colors must be applied at various levels. Other reasons are obvious when you start thinking of finishing before assembly.

When comparing the merits of a vacuum (do you mean compressed air) spray over an airless system, it must be said that they are both good

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for specific applications. Certainly no one could recommend either—or any other type of equipment—without knowing your particular needs.—*A.A.*

If you are merely looking for something to protect the natural color of your furniture, there are many materials which can qualify as one-coat systems. However, if your wood requires any coloring, matching or filling, you are frankly asking an impossibility; and you have plenty of company.

Even if you are only seeking transparent protection, the end result of any one-coat system that I have ever seen will still be a weak, hungry finish. You mention preserving the beauty of the wood. Is not beautiful wood deserving of more than that?

If there is no need to color the wood, I would still suggest a minimum of two coats. These could be either a sealer and top-coat combination or two coats of topcoat finish. I think you would do well with lacquer, either a high-solids cold lacquer or a hot-spray lacquer.

If you must color the wood to any degree, you will have to stain it; and there is no substitute for staining. True, there are toners and tinted (transparent) topcoats. These will give some color to the finish. However, they never have any true similarity to stained woods, and they do obscure the grain to a certain degree. Only trial will determine whether they are what you or your customers will accept.

Airless spray does an excellent job where large areas must be sprayed without too much regard to detail, or where interiors must be sprayed with a minimum of back-spray. I would recommend a hot-spray system in your case. In your climate (Wisc.) it

IN ROLLS
Cut off any size piece as needed.
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There's a big difference between a finishing job where every speck of dust has been removed—and the poor-quality finish resulting from a dusty surface. A quick wipe with a Bond TACK CLOTH before finishing is real economy —it insures a dust-free surface every time!

There's a big difference in TACK CLOTHS, too—that's why BOND produces FOUR different meshes of cloth with several types of formulation to give you the cloth that best "fits" your special needs, whether wood or metal surfaces are involved.

Packed in 150 yard rolls of 36" wide cloth or in handy cartons, as you prefer. Also individually packed in Glassine Envelopes—144 to the carton. Stays soft and tacky until the last bit is used up. Choice of Standard, extra Tacky or less Tacky—in WHITE or in GOLD.

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would be a big help. With it, you would be getting more coating applied per coat, which is what I think you really want.—*G. Conrad.*

As far as I know, no one has been able to develop a satisfactory one-coat finish for wood furniture. Certainly there is no single coat product on the market that would produce the same quality finish as a multi-coat operation.

There are some concerns who are finishing wood furniture with one-coat of tinted oil on very low priced furniture. This, of course, would be known as an oil finish. This finish is produced by: 1) sanding the wood; 2) glue sizing; 3) polishing with a very fine sandpaper in the sanding room; 4) the application of a heavy oil, tinted if preferred; 5) steelwool and wax. However, the better oil finishes are achieved through the use of a number of coats of oil, and sanding with No. 8/0 sandpaper between each coat.

Some manufacturers of very low priced furniture use the colored wax-type lacquer which is sprayed on and then, after the finish is thoroughly dry, it is wooled with No. 3/0 steelwool and waxed.

There are some synthetic-resin base materials, such as acrylic, which have the color incorporated in them; they can be sprayed onto the wood and will hold the grain down. These finishes can then be steelwooled and waxed. This would be suitable for a so-called open-pore finish.

No one-coat finish, to my knowledge, will have enough build of finish to produce a quality job. Also, none of the one-coat finishes would fill the pore wood and at the same time have an extra good build.

If you have solid wood furniture, such as gum, tupelo or maple, and your furniture is in a low-priced field, then you could perhaps have some finishing material house work out a one-coat application that would be fairly satisfactory.—*H. W. Chester.*

Geo. F. Matacek; Bee Chemical

Bee Chemical Co., Lansing, Illinois, has appointed Mr. George F. Matacek, District Manager of its Western Division at Gardena, California.

Mr. Matacek was formerly the Chief Chemist of the Western Division and served for several years as a group leader in Research at the company's main laboratories before the formation of the Western Division.

The firm formulates and manufactures specialty coatings for plastics, metals and vacuum metallizing.

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Custom Finishing of Uph. Furniture Parts

As manufacturers of upholstered living room furniture, we are looking for a source for custom wood finishing —preferably by a company having some past experience or currently finishing exposed wooden parts, such as feet and mouldings, etc., as used on upholstered living room furniture. It would be desirable that the company be located in the western part of New York state or western Pennsylvania. Any help you can give us in locating this type of facility would be appreciated.—*E. Mfg. Co.*

Can some reader suggest the name of a custom finisher who might be interested in this inquiry?—*Editor.*

In all of my experience, I have never known any producer of upholstered furniture who did not do his own finishing of the various carvings, feet, mouldings, etc.

Frankly, it does not seem practical to do them any other way. First, it enables the workmen to go ahead with the construction of frames, and all steps prior to covering, without fear of damage to such parts—which would not be the case if they were finished. More important, it enables the upholsterer to shade the carvings to harmonize with the leather or fabric, thus avoiding any harsh clash of color. The latter is very important.

Carvings, etc., are seldom given a very elaborate finish. Those that are not too conspicuous are sanded only roughly, colored with a wiping stain, then given one or two coats of lacquer or shellac. For more prominent parts, or for expensive furniture, this finish can be up-graded by better sanding, more coats, and/or sanding between coats. Some pieces lend themselves to finishing by tumbling.

There is such an endless variety of woods, designs and finishes that it would not pay any custom finisher to embark on such a project and promote it. Otherwise the carvers would furnish them finished.

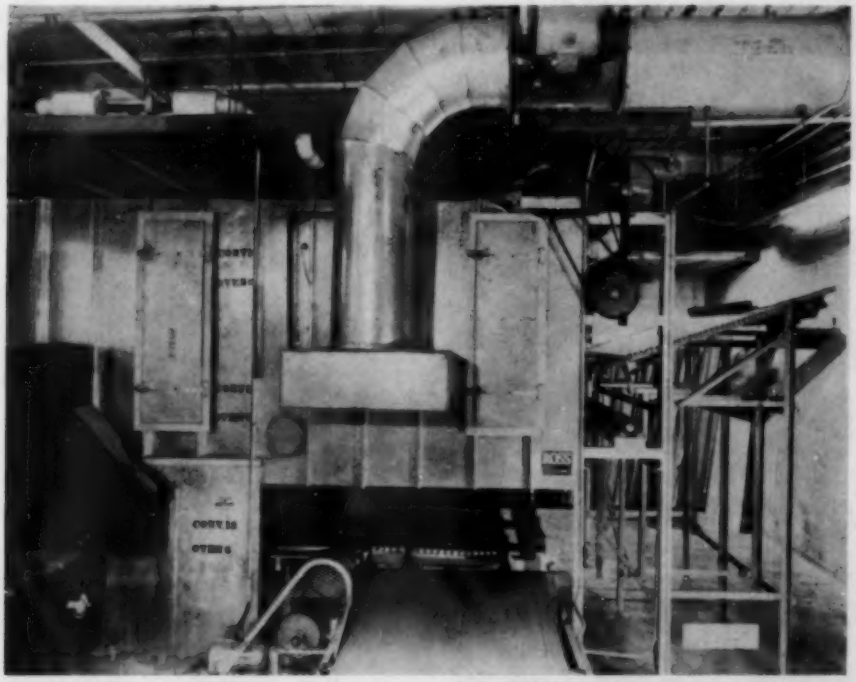
At the same time, any finisher whom you might contact, might be willing to coat your carvings to your specifications.—*Ken MacKenzie.*

Flexibility in an individual; this means that the ability to adjust quickly to new developments and changed situations.

Oven and Cooling Tunnel Dries, Cools Ply Panels

Features counter-flow and high velocity drying, followed by fan and refrigeration cooling.

A NEW triple-deck combination oven-and-cooling tunnel at the United States Plywood Corp., Orangeburg, S. C., dries finished plywood panels and then cools them for immediate sanding. The oven utilizes counter-flow and high-velocity air drying, and the cooling tunnel em-



One end of triple-deck combination oven-and-cooling tunnel at U. S. Plywood plant. Shown here is panel being transferred from top to middle section by hinged platform which swings downward to redirect panel. Also shown is right-angle transfer at tunnel exit. Black insulated ducting to left is part of refrigeration system which cools panels for immediate sanding. Photograph from the J. O. Ross Engineering Division of the Midland-Ross Corporation.

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OP-AL BURN-IN TOOLS and KNIVES are made of hardened tool steel especially selected for the purpose. The blades are cemented in the handles with ceramic cement to withstand high heat without coming loose from the handles, which are streamlined and well balanced for easy handling.

THE OP-AL ELECTRIC AND MANUFACTURING COMPANY

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ploys both fans and refrigeration for cooling.

Custom-engineered transfer mechanisms at oven-and-cooling tunnel terminals direct panels to succeeding stages. The dual-purpose facility was designed and manufactured by a well-known firm in New York, N. Y., as part of an overall automated plywood finishing line engineered by the company.

The 75-ft. long multi-pass installation saves approximately 1500-sq.ft. of floor space by making use of overhead space which would otherwise be wasted. Panels enter the oven at the upper level after receiving their final lacquer coatings. They travel through the oven against a counterflow of air at temperatures up to 200° F., and emerge at the far end onto a skate-wheel platform. This platform then swings downward due to the weight of the panel, and directs the panel into the center compartment, through which it again travels against a counterflow of air at temperatures up to 200° F.

Part-way through the middle section, the panels enter the high-velocity zone. Here air up to 325° F. is directed against them at velocities up to 4000-ft. per min. The air is impinged against the panels through nozzle outlets in the bottoms of closely spaced transverse ducts located above the traveling panels. This high-velocity stage completes the final drying phase in a fraction of the time required with counterflow drying, and hence requires less space and equipment; it increases productivity in comparison with previous drying methods.

The U. S. Plywood high-velocity oven accomplishes in 1½ minutes what would require 6 or 7 minutes in a conventional counterflow installation. (The slower-drying method is required in the preliminary drying stages, however, to assure thorough

evaporation of innermost solvents before setting of the outer lacquer surface.)

The dried panels transfer from the center section to the lower cooling level by means of a second hinged drop-transfer, and pass before a battery of fans which circulate room air over them. In the summer this air is exhausted to the atmosphere. In the winter, all or part of it is recirculated into the room.

Following the initial cooling stage, the panels enter a refrigerated tunnel in which they are brought down to room temperature.

Upon leaving the refrigerated tunnel, the panels emerge onto a section of skate-wheel conveyor which retracts upon receiving the full panel, and deposits it on a right-angle chain-conveyor which takes it to the sanding operation.

Fine Hardwoods Brochure Free

The Fine Hardwoods Association has announced the publication of a new 8-page brochure aimed at making it easy for the architect and interior designer to specify hardwood interiors.

In full color, the brochure is entitled, "Fine Hardwood Veneers for Architectural Interiors." Within its covers, illustrations and copy make clear a number of interesting and helpful facts. The publication begins with a discussion of color range, visual texture, and physical texture of hardwoods. Veneer cutting methods and figure types are illustrated and explained.

Information and examples are furnished on specifying hardwood veneer and plywood. A chart gives the commercial names, origin, color, and type of figure of 34 major hardwood species. A glossary of terms is included. Veneer matching effects are also illustrated and explained. The back page is devoted to full color illustrations of hardwood species. For a free copy, write to Fine Hardwoods Association, 666 North Lake Shore Drive, Chicago 11, Illinois.

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Keep prices competitive while giving your products the handsome appearance of multi-color wood grain finishes so like the original, most buyers take it for granted. Print assembled cabinets up to 40 inches high in two colors simultaneously, on the model shown. Other models to fit every purpose.

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WRITE OR PHONE FOR COMPLETE INFORMATION

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What It Takes for Fine Machine Tool Finishing

IT IS DIFFICULT if not impossible to produce a really high quality, uniformly smooth gloss finish on a product that is made up of both sheet steel and iron castings—without putty glazing the castings. The tiny sand holes and rough areas of the castings can only be filled by putty glazing, after which the primer-surfacer and top coats may be applied.

Putty glaze is generally applied by "knifing" the material onto the surface, or by using a leather pad to apply it and work it into the pores and rough areas. To build a good foundation for a high quality finish, it has been found desirable to start with a thinned air-dry putty glaze and brush this material into and onto the rough surface of the iron castings. Brush bristles have a tendency to work the glaze material into the pores and cavities of the casting.

If the casting is relatively large, by the time the entire area is glazed, the brush coat will be sufficiently dry at the starting point to begin knifing on the second coat of putty glaze. The same procedure can be followed, if it is desirable, to knife on a third coat of putty glaze. This would depend upon the condition of the casting surface and the quality of finish required. Brushing on the first coat of glaze can be done in a reasonably short period of time, thus compensating, to some extent, for the second and even the third knife coat of putty glaze. This preliminary work

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DUST MASKS

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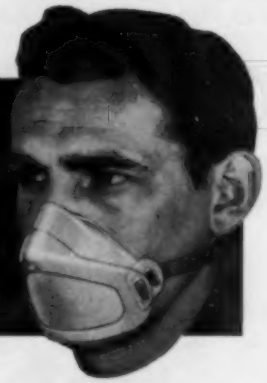

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No wonder FLEX-A-FOAM is the one dust respirator workers welcome and WEAR!

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FLEX-A-FOAM DUST MASK

FLEXO PRODUCTS, INC.
Westlake, Ohio

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is necessary to produce the smooth surface foundation for an attractive, glossy smooth, enamel finish.—*F. M.*

J. M. Courier; Detrex Chemical

J. M. Courier has been made Assistant Sales Manager for the Chemical Processing Division of Detrex Chemical Industries, Inc. Mr. Courier is a graduate chemical engineer and has been with Detrex for ten years in various sales and engineering capacities.

Control Paint Overspray And Fire Hazard

THE DRY PAINT spray booth can present two serious difficulties. First is the possible fire hazard; second, overspray blown from the exhaust stack may alight on parked cars, the neighbor's wash line or other property on which paint overspray is highly objectionable.

Paint overspray, drawn into the exhaust stack by the fan where it accumulates, presents a definite fire hazard. Not all of the overspray sticks to the inside of the stack, and those paint particles that do not adhere to the stack interior, are blown from the stack, picked up by the breeze and eventually deposited in the adjoining neighborhood.

Both the fire hazard and the objectionable flying overspray can be prevented. Paint arrestors, easily installed in the back wall of any dry spray booth, will catch and hold the paint overspray and prevent it from even entering the exhaust stack. As the arrestors become loaded with paint overspray they

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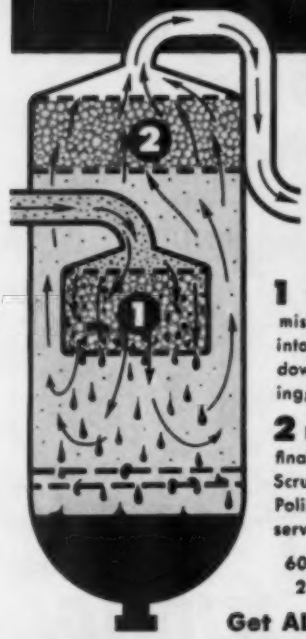

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2 DRY POLISHER CARTRIDGE gives the final touch; leaves the air extra-clean. Scrubber does nearly all the work, so Polisher also has almost unlimited service life.

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can be easily removed, safely disposed of and quickly replaced with clean arrestors.

With no paint accumulation in the exhaust stack the principal fire hazard has been eliminated. If a peelable (strippable) coating is applied to the interior walls of the spray booth, it can be kept clean and free of overspray at a minimum of maintenance cost. As the strippable interior film becomes coated with overspray it is stripped off and replaced with another coating. A clean spray booth is not only a safety factor; it also helps build and maintain shop morale, without which quality is impossible.—*T. A. F.*

The only way to provide regular employment is through customers and users—people who buy our product or service.

Columbia-Southern Chemical, A Division of P.P.G. Co.

Columbia-Southern Chemical Corp., a wholly-owned subsidiary, became a division of Pittsburgh Plate Glass Co. on January 1, 1961. The new division is now operating under the name of Pittsburgh Plate Glass Co., Chemical Division. The principal officers of Columbia-Southern Chemical Corp. have been elected as officers of Pittsburgh Plate Glass Co.

The Chemical Division will continue to market its products under the widely-known trade name, "Columbia-Southern Chemicals." These products include chlorine, caustic soda, soda ash, solvents, silica pigments, chrome chemicals and barium chemicals.

Superintendent of Coatings

Walter C. Archinal has been made superintendent of coatings production at Metal & Thermit Corp.'s Carrollton, Ky., plant. Mr. Archinal has been associated with the company's Coatings Division since 1959 as a research chemist.

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Pearl Essence Finishes Are Highly Decorative

THOSE WHO APPLY decorative finishes on their products should not overlook or forget the eye appeal of pearl pigments. Natural and synthetic pearl essence produce a luster and brilliance which is impossible to obtain with conventional dyes or pigments.

Both natural and synthetic pearl essence finishes may be very well applied on wood, metal, plastics, ceramics, leather, glass, paper, plaster composition, etc. For some plastics, such as polystyrene, ethyl cellulose lacquer is preferable over nitrocellulose lacquer, as the latter would attack this plastic.

Porous materials such as plaster composition, ceramics, wood, leather, etc., should be sealed before the pearl finish is applied. The surface on which pearl finish is applied must be clean and smooth. Any surface defect is magnified by this finish because of its brilliance.

Pearl finishes may be applied by brush, spray, dip, roller coat—in fact, by any conventional finishing method. It can also be used in screen processing. Pearl essence may be used for hammered effect, textured, crackle, veiled and webbed finishes to add brilliance.

Natural pearl essence, being a nonconductor, may be used for other than purely decorative purposes. These include its use as a coating for dials, switches, instrument control panels, handles, signals and markers; also for motion picture projectors and screens.

KILL STATIC WITH A GUN!

Simco Ionizing Air Guns will put an end to static woes in any finishing operation! Plastic parts are blown clean, while being neutralized, so that dust, dirt and lint are *completely* removed and will not be reattracted! This new electronic air gun is safe, easy to use, and ***guaranteed*** effective! Write for facts.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

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It may be well to carefully check your product to find out if the addition of pearl essence would improve its appearance and produce greater eye appeal.—*P. C. B.*

The non-creative person looks at a problem as one big stubborn mass. The creative person starts breaking it down into bite-size chunks the moment he sees it.

Painting Sunken Letters

THERE ARE A number of ways to paint, in contrasting color, various sunken or depressed lines, decorative designs, names, trademarks, etc. One method is to automatically spray the color onto the surface of the object, then transfer it immediately to an automatic wiping machine that removes the paint or ink from the adjoining surfaces, leaving paint only in the depressed areas. These are high production machines for use on both plastics and metal.

Where only thin sheet metal is involved, another production method is to apply the color, by a lithograph press, on the flat sheet stock before the sheets go to the embossing machine. The colored areas are then depressed at this machine, leaving the adjoining areas on a higher level.

These two methods are generally used in plants where standard products are produced in volume. For limited production, or where the products to be finished are continually changing, such as in a custom finishing shop, the paint or

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For your 'standard' requirements, or for the custom solution to a unique problem, consult BARTELS specialists. BARTELS Metal Decorating Coatings are developed in modern research laboratories and quality-controlled in the matching room and plant to give you consistent order-to-order uniformity. Why not call a BARTELS metal decorating specialist today!

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ink may be hand sprayed on the surface. Then the color can be manually wiped from the adjoining surfaces by an operator who uses a non-linty cloth wrapped tightly over his forefinger. Care must be taken to avoid using too much pressure when wiping, so the cloth will not drag color out of the sunken areas.

Where only straight, slightly depressed lines, or perhaps a simple design is to be colored, it is possible to manually apply the color directly into the sunken areas, using a modified hypodermic needle or a special fountain pen. Girls and women can do this work neater and faster than men. This may seem like a long and tedious method of applying color in sunken areas, but it is faster than one thinks, and it is extremely useful for limited or intermittent production. —*B. P. C.*

Flood & Conklin Mfg. Co. is Sold A. M. Golden, New President

Mr. Franklin Conklin, Jr., President and Chairman of the Board of Flood & Conklin Mfg. Co., Newark, N. J., has announced that the company has been sold to a group headed by Mr. Arthur M. Golden. At the same time it was announced that Mr. Conklin will remain with the company as Chairman of the Board and that Mr. Golden, who formerly held a similar position with Cellofilm Industries, Inc., will join the company as President and Chief Executive Officer. Other executive personnel remain unchanged.

Arthur M. Golden

Founded in the 1880's, Flood & Conklin manufactures a complete line of paints, enamels, lacquers, synthetics, and other industrial coatings, as well as a complete line of household paints. The new management has stated that plans for expansion will be announced later.

Synthetic Pearl Pigment
SUPERIOR TO NATURAL
at the Synthetic Price

TEST PEARL GLO (new synthetic *Patented essence), whether you spray, dip or incorporate, you'll find a saving in equipment & labor required. Use it on any sealed surface, plastic, metal, wood, leather, paper, etc. It may also be incorporated into Acrylic, Polyester, Vinyl, Polyethylene, etc. Gives a dazzling pearl finish at very low cost.

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Light Face-Fitting Masks Help Save Workmen

REGARDLESS of how seemingly adequate and well planned an exhaust system may be there are some shop operations that create dust that flies away and floats in the air. The dust particles may be as small as 1/25000 of an inch—far too small to see with the naked eye—yet they are in the air in large volume surrounding the operation. A workman, stationed on these jobs for eight hours a day, should be protected from these dust particles.

The same thing applies to operators of manual and automatic paint spray equipment. Most plants have reasonably efficient exhaust systems to serve the spray booths, yet the operator cannot help but inhale some of the overspray. This applies especially to those who spray paint into the interior surfaces of objects where the air pressure causes some of the paint particles to bounce back.

Some workers are allergic to certain solvents used in paint, but whether allergic or not, inhaling paint particles and solvent for eight hours a day is not conducive to good health.

In many instances masks are issued to such workers, but unfortunately some employes will not use them. There may be any number of objections, such as the mask is not comfortable, it doesn't fit nose and face contour, or it's too hot during the summer, it's too heavy or perhaps it makes breathing difficult.

Masks for both

HERE ARE THE REASONS:

- Single-phase motor drive has no belts or gears to wear out or cause trouble.
- High starting torque, constant speed operation virtually rule out overloading due to misapplication.
- Lifetime lubricated bearings help reduce maintenance.
- Sturdy, advanced design eliminates need for commutator, brushes, capacitor, or centrifugal switch.

For complete details on this rugged time and money saving sander, send for Bulletin OE-900.

(A complete line of air sanders, too—Bulletin 2102)

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SUNDSTRAND MACHINE TOOL
BELVIDERE, ILLINOIS
Division of SUNDSTRAND CORPORATION

For more data, circle 196 on colored card.

dust and paint are available that are self adjusting to any face and nose contour, and one of them weighs only one ounce. A certain make of mask that I have in mind can be worn with safety goggles or spectacles. The dust mask has a latex washable filter, and both types of masks are designed so that the filters may be replaced when necessary.

Well trained experienced workmen are valuable. They have their life and health at stake. The company has a big stake in their training, ability, experience and the service they render. Let's keep them safe, comfortable and healthy.—*C. B. P.*

Glidden Co. Expands in Field of Metal Powders

In a move to expand its operations in the metal powders field, The Glidden Co. has purchased the assets of the metals division of The Crane Co. of Johnstown, Pa. The newly acquired facilities now become a part of the metals department of Glidden's Chemicals Division.

Glidden's participation in the metal powders field has been strengthened by the recently completed expansion of technical facilities at the company's Hammond, Ind., plant, which included enlarging and modernizing the Central Laboratory, and the addition of a new product development and sales service pilot laboratory.

W. P. Fuller & Co. Names New V. P. and New Treasurer

E. R. MacMillan has been elected to the newly created post of vice president, operations, of W. P. Fuller & Co. John M. Fuller has been elected company treasurer.

Mr. MacMillan, formerly assistant to the president, joined W. P. Fuller & Co. 2½ years ago. He had been V. P. of another company previously.

John M. Fuller, a great-grandson of the firm's founder, joined the company 14 years ago. He entered the general sales department in San Francisco and shortly afterward became assistant manager of the Industrial Finishes Division.

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We were avalanched with trial orders for our AGATEEN PONETIC No. 1 advertised in January publications. Shipments are going out daily. You will get your PONETIC No. 1 soon!

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Stillwell 4-0660-1

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wilco machine works, inc.
WH 8-4555 Box 38971F-2 Memphis, Tenn.

For more data, circle 233 on colored card.

● SUPPLIES
● MATERIALS
● EQUIPMENT

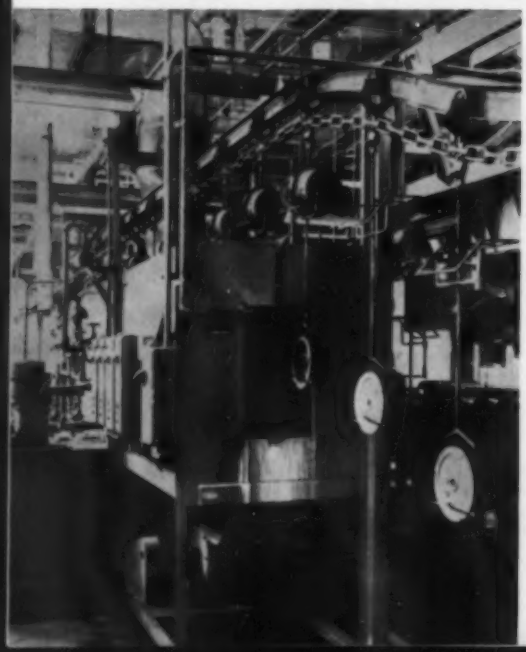
Chlorinated Polypropylene

Chlorinated polypropylene is now available, it was announced by Hercules Powder Co., Wilmington 99, Delaware. Its uses include coatings, inks, adhesives, and paper coatings.

The new film-forming polymer, "Parlon P," has excellent heat resistant properties and also may be applicable in flame-retardant compounds.

In addition to heat and light stability, this chlorinated polymer has excellent solution color, produces clear water-white films and has good chemical resistance. In physical form, the product is a white, free-flowing powder and is soluble in many common solvents.

For more data, circle 1 on colored card.



Conveyorized 2-Stage Washer Has Unusual Features

An unusual design feature which protects the conveyor from corrosion has been incorporated into a 2-stage washer built by The DeVilbiss Co. for the Hotpoint division of General Electric Co., Chicago.

The monorail conveyor is external with its work holders extended downward through a slot in the top of the washer. Unmachined parts are carried in the top sections of the conveyor hangers, outside the machine. Machined parts are carried in lower sections of the conveyor hangers and pass through the washer.

This arrangement permits *one conveyor* to act as a raw parts transport conveyor, a raw parts float conveyor, a machined parts transport conveyor and a machined parts washer conveyor. The reasons for not allowing the raw parts to pass through the washer were two-fold: First, so the parts would not be heated for the machining operation (this would change machining dimensions after the parts cool) and second, to eliminate the added costs of washing the parts more than once.

The unit will process 133 sets (2800-lbs.) of transmission castings per hour at a conveyor speed of 10-ft.

Exit end of 2-stage washer with external conveyor designed by DeVilbiss for the Hotpoint division of G.E. The conveyor is protected from corrosion; Neoprene seals at top minimize the loss of steam.

per minute. The solution tanks are heated by steam coils to 190° F. and the liquid is sprayed through 105 nozzles at 15-lbs. pressure. The solution pumps are vertical immersion type (for easy removal) and deliver at the rate of 350 gallons per minute for washing and 150 for rinsing.

Blow-off is accomplished by high velocity air directed through air slots adjacent to the work.

The machine is 37-ft. long, 5-ft. wide and 9-ft.4-in. high. It is a product of The DeVilbiss Co., Toledo, O.

For more data, circle 2 on colored card.

One-Coat Organosol Coating Cuts Production Time

A series of organosol coatings, Sterilkote 360, that give excellent metal adhesion with only one application and no primer, have been introduced by the Bradley & Vrooman Co., 2629 S. Dearborn St., Chicago 16, Ill. Laboratory tests indicate the new one-coat organosols are more abrasion resistant than certain conventional coatings that require two applications and priming.

Sterilkote one-coat organosols are vinyl-resin based and may be applied by manual, automatic or electrostatic spray equipment, as well as by regular and reverse roll-coaters. The baking cycles are flexible and can be varied to suit different production ovens.

The new organosols, besides being protective, are decorative. They can be supplied in a wide variety of colors and can produce either smooth finishes or textured finishes when applied over embossed metal surfaces.

The coatings produced are flexible and have a high resistance to humidity, water, salt spray, peeling, chipping, flaking and marring. These organosols have an extremely wide application range.

For more data, circle 3 on colored card.

Du Pont Fish Eye Eliminator Offered in Dispenser

A dispenser especially designed for convenient and accurate use of Fish Eye Eliminator is offered by the refinish section of Du Pont's Fabrics & Finishes Department, Wilmington 98, Delaware.

Fish eye eliminator, put up easy to use.

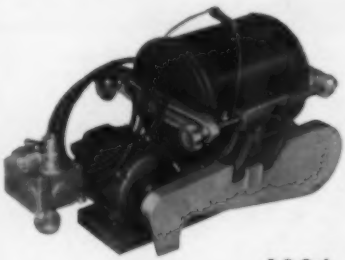
"Fish eye" is a term used in the refinishing trade to describe "craters" which result when a surface treated with silicone polish is refinished with lacquer or enamel. Fish Eye Eliminator is Du Pont's paint additive which counteracts the silicone and prevents fish eyes from appearing in the refinish top coats.

The new dispenser is a calibrated plastic cup attached to the top of a plastic container which measures the proper amount of additive for a pint, a quart, a half-gallon, or a gallon of thinned paint. Four-ounce containers which employ this dispenser will replace similar containers now equipped with a pump-type dispenser. Also available is an economy-size eight-ounce bottle with the new dispenser.

Prillaman Drawer-Glide Waxes penetrate deep into pores of the wood, thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. They also beautify the wood and give surfaces a smooth, waxy feel. Supplied in color or colorless to be applied by spray, brush, sponge or dipping.

THE PRILLAMAN CO.
MARTINSVILLE, VIRGINIA

For more data, circle 234 on colored card.



1-5 Gal. Capacity

Model 4 Bull Dog Shaker

Will condition paint to brushing consistency in one to five gallon cans without opening the can. Time required is from two to thirty minutes depending on the paint formulation and the length of time it has been on the shelf. Simply place the can in the saddle, tighten the end plates and flip the switch. Bull Dog will do the rest.

Grenier & Co., Inc.
13142 Rexford St., Blue Island, Illinois

For more data, circle 235 on colored card.

The new dispenser eliminates both guesswork and spillage in pouring Fish Eye Eliminator from a container. When the refinisher receives a 4-oz. or 8-oz. bottle, he removes and discards the cap and screws on the dispenser. It is designed in such a way that no additive is lost and no impurities enter the breakproof container.

When the man in the shop is ready to use the additive, he merely squeezes the bottle until the proper amount of additive rises into the dispenser, then pours the additive into the paint. A quick turn of a lid on the top of the dispenser provides an opening for pouring or closes the hole after pouring.

For more data, circle 4 on colored card.

New Dipping Process Produces Drip-Free Finish

A recently developed process known as the Smart Controlled-Withdrawal Dipping Process produces drip-free finishes by using a dip tank with a hydraulic mechanism that raises and lowers the tank. The process was developed in conjunction with the J. O. Ross Engineering Division of Midland-Ross Corp., 730 Third Ave., New York 17, N. Y.

The parts to be painted are mounted on flight bars of equal length. These are hung from a constantly moving monorail conveyor, that goes through a power spray washer and phosphatizing unit, or vapor spray degreaser as required for polished brass parts to prevent spotting. After a sufficient cool down cycle, the flight bars loaded with parts to be finished are transported to a mechanical transfer, where a pair of walking beams pick the flight bars individually from the moving monorail conveyor and accumulate them, over the tank.

For more data, circle 197 on colored card.

A hydraulic mechanism raises the tank until the parts are all immersed in the coating; then it immediately retracts at an absolutely even speed of 4 to 12-in. per minute.

By slowly withdrawing the parts from the coating material, excess liquid is drawn off the parts by capillary action and surface tension. The film or paint remaining on the parts is even, uniform and free of drips.

The accumulated flight bars are then automatically transferred to an area beyond the dip tanks, where they are individually transferred back onto the moving monorail conveyor for an uninterrupted process.

The parts then go through Ross ovens to bake-cure the coating. A zoned oven is used. The first zone operates at a lower temperature so that solvents can be evaporated from the wet coating without blistering, before the high temperature in the second zone cures the organic coating.

This process is useful for coating any product that has no cavities or recesses to trap excessive quantities of coating material or to trap air, leaving an uncoated area when immersed vertically in the coating material.

The Smart Process is extremely flexible, and it is possible to apply prime and finish coats and also different colors to different objects carried by the same conveyor.

The originator of the process is A. W. Smart, Consultant, 48 Jackson Court, Hempstead, New York.

For more data, circle 5 on colored card.

If an employee is so completely supervised that he can't make a mistake, he is bound to consider his own role unimportant.

PERFECT ADHESION!*
EXTREME RESISTANCE TO SOLVENTS/CHEMICALS!
You get both with Naz-Dar ER Series EPOXY resin silk screen ink
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A A COMPANY
The NAZ-DAR Company
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Chicago 10, Illinois

For more data, circle 198 on colored card.

Air Cap and Fluid Tip for Spraying Etch Resist

A DeVilbiss air cap and fluid tip for use in connection with the etching or chemical milling of aluminum, aluminum alloys, titanium, stain and tool steels has been announced by the company.

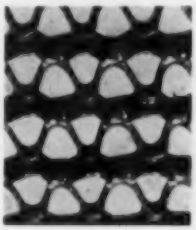
The company recommends its 704 air cap over a FX fluid tip for spray applying Eastman KMER (Kodak Metal Etch Resist) which, when developed, protects the desired areas of the metal from etching during processing.

The cap and tip can be used with standard DeVilbiss guns and a pressure system, either remote cup or tank type. The DeVilbiss Co., Toledo, Ohio.

For more data, circle 6 on colored card.

Soft Neotex Protective Rubber Mesh Matting

Research Products Corp., Madison 1, Wisc., has made an addition to its line of Neotex Rubber Mesh Matting. The product has been manufactured for several years in two patterns with diamond shaped openings —either ⅜-in. or ¼-in. wide. It is used extensively for protecting delicate, highly polished or painted surfaces in transit, or on work benches, or in tote boxes and in many other places.



The new design has a "symmetrical" pattern, and the manufacturer

claims that because it is softer and more pliable, its function is expanded to include use as a shower mat in shower rooms and stalls. It is produced in rolls 26-in. x 50-ft. and can be easily cut to any desired size or shape—to provide an attractive, colorful, safe and soft cushion underfoot.

Because of the open mesh pattern (there are approximately 750 openings per square foot) air and water passes freely through and under the matting—an important feature for improved sanitation. And, sterilization may be accomplished by boiling or autoclaving without affecting the Neoprene from which Neotex Mesh Matting is made.

For more data, circle 7 on colored card.

Non-Haze, High-Gloss Toluidine Red Pigment

A distinctive yellow shade Toluidine red pigment for paints, which produces a high-gloss, haze-resistant finish, is now available from the Pigment, Color & Chemical Division of The Sherwin-Williams Co., 260 Madison Ave., New York 16, N. Y.

Outside exposure tests on the new high-gloss Toluidine Red Light 10486 show that it maintains its higher gloss for more than nine months, and indications are that additional exposure up to the limit of the durability of the film will continue to show a noticeable improvement.

The freedom from haze, obtained with this new Toluidine red, is outstanding. The excellent light resistance, alkali resistance and hiding for which Toluidine Red pigments are known are also found in this new standard.

Technical Folder F-4 gives further information on Toluidine Red Light 10486.

For more data, circle 8 on colored card.

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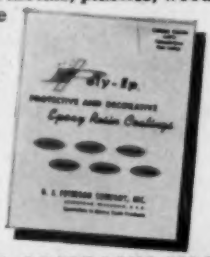
Two components mixed in equal volume produce a finish with unusual physical and electrical properties that make it ideal for a great variety of applications on metals, plastics, wood, etc. Investigate it TODAY.



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Manufacturers of Quality Coatings

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For more data, circle 237 on colored card.

Whirling Gun Automatic Spray Painting Machine

For painting or decorating large intricately shaped metal discs, such as fancy hub caps for automobile wheels, Conforming Matrix Corp. offers a Whirling Gun Automatic Spray Painting Machine, Model RM2G.

It continuously whirls two opposing guns instead of spinning the part, therefore it is faster than a single spindle rotary sprayer because it is not necessary to wait for a spindle to start and stop. Guns may also be used in fixed position.

The machine is designed for economical painting of a wide variety of round, deep-draw and intricately designed parts with diameters up to 15-in.

The part to be painted is put into the mask and a pedal or hand valve is actuated. The part is automatically clamped into position at the desired pressure. Guns operate at predetermined settings and the clamp retracts upon completion of the cycle.

Convenient dials control spray atomization, speed of gun rotation and length of spray time. A product of Conforming Matrix Corp., 830 New York Ave., Toledo 11, Ohio.

For more data, circle 9 on colored card.

Stain-Free Drying After Wet Cleaning of Metal

The new patented "Trisec" process provides rapid, thorough, stain free drying of water-wet metal parts at low cost. The process and the "Trisec" solvent are developments of Imperial Chemical Industries, Ltd. Phillips Mfg. Co., 3475 W. Touhy Ave., Chicago 45, Ill., has been granted a license for the manufacture of the equipment, use of the process and distribution rights of "Trisec" in the United States.

The drying of metal parts after wet cleaning without leaving water residue stains, has long been a problem to metal finishers.

A special drying solvent, "Trisec", containing trichlorethylene, is used in especially designed equipment that outwardly resembles a liquid-liquid-vapor degreasing machine. The process is suitable for practically any article unaffected by trichlorethylene, including glass, ceramics and metals. It can be used for intricately shaped parts with cracks and crevices, as well as stampings, extrusions, castings, tubes, wire and strip.

For more data, circle 10 on colored card.

Bronze Swivel Conveyor Hooks Need No Lubrication

A new swivel hook for overhead conveyors is announced by Dormont Allen Co., Riverside, Illinois, conveyor equipment specialists.

In addition to certain design improvements, the Dormont Allen swivel hooks are made of a special high tensile manganese bronze which has mechanical properties superior to malleable iron swivel hooks.

The new hooks, designated as "DAC 8152," are 90° indexing, and are especially suitable for applications in which lubrication of the swivel is impossible or impractical, such as on conveyors operating through ovens, furnaces and in other environments where extreme temperatures are encountered.

Even in normal applications, where

swivel hook lubrication is likely to be neglected, "DAC" bronze hooks give many times longer wear than hooks of malleable iron. Their somewhat greater cost is more than recovered in savings in lubrication expense and by minimizing production delays due to conveyor hook failure in dry-wear situations.

For more data, circle 11 on colored card.

Versatile Cleaning Machine For Small Parts

Just 5-ft. long and 4½-ft. wide, a drum-type cleaning machine designed specifically for low-cost large volume cleaning of small parts, is offered by Cincinnati Cleaning & Finishing Machinery Co., 2006 Hageman St., Cincinnati 41, Ohio.

Suitable for stampings, castings and machined parts, the machine has a variable speed drive which provides capacity ranging from 6 to 9-cu.ft. of parts per hour.

In operation, parts are loaded into the machine manually from shop containers or direct from a conveyor discharging into the loading hopper. The parts are conveyed through the machine by a worm inside the drum, passing through a soak section, a spray section and finally a drain section before being automatically discharged. Time in the various sections is controlled by the variable speed drive.

The machine is self-contained; it has the cleaning solution pump and motor, variable-speed drive and motor, ventilating blower and motor, solution temperature controls and solution tank with access door to solution-filtering screens. The solution tank may be heated by steam, gas or electricity. Motor controls are mounted in a single enclosure with interlocked disconnect switch.

For more data, circle 12 on colored card.

BOOKS On Finishing Available

"PRINCIPLES OF COLOR AND COLOR MIXING," (130 pages)	6.95
"PROTECTIVE COATINGS FOR METALS," (643 pages)	12.00
"ORGANIC COATING TECHNOLOGY," Vol. 1	13.50
"ALUMINUM PAINT & POWDER" (219 pages)	4.50
"FLOW COATING," (296 pages) new	8.00
"CHEMICAL FORMULARY" (Vol. X) (Preceding Volumes also available, same price)	8.00
"PRACTICAL FURNITURE AND WOOD FINISHING"	2.00
"FURNITURE FINISHING" (543 pages)	5.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.50
"COLOR DECORATION AND DESIGN" (200 pages)	3.00
"THE MIXING OF COLORS AND PAINTS" (292 pages)	3.00
"WOOD FINISHING" (361 pages)	3.00
"GRAINING"—Ancient and Modern (234 pages)	5.00
"SCREEN PROCESS METHODS OF REPRODUCTION" (252 pages)	4.00
"THE SCIENCE OF WRINKLE FINISHING" (204 pages)	5.00
"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages)	7.50
"RESTORING AND MAINTAINING FINISHES" (88 pages)	2.75
"INDUSTRIAL FINISHING AND COMMON SENSE" (335 pages)	9.00
"FINISHING MATERIALS AND METHODS", new (382 pages)	5.00
"ENCYCLOPEDIA OF THE CHEMICAL PROCESS INDUSTRIES" (820 pages)	12.00
"PROFESSIONAL FURNITURE PATCHING, REPAIRING and APPLIANCE TOUCH-UP" (90 pages)	3.50
"SCIENTIFIC PAINT EVALUATION," (321 pages)	9.00
"FILM FORMATION, FILM PROPERTIES and FILM DETERIORATION" (430 pages)	9.75
"INDUSTRIAL DETERGENCY" (340 pages)	8.75
"SURFACE COATINGS AND FINISHES (299 pages)	9.00

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"Abrasives, Their Use in Surface Preparation"
"The Piano Finish"
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"Fast Color Changes When Painting Tubular Chairs"
"Where Painting Operations Are On the Assembly Line"
"Fine Wood Cabinet Finish Applied on Conveyor Line"

Industrial Finishing Magazine
1142 N. Meridian St., Indianapolis 4, Ind.

Burnishing Compound by Oakite

A new product, designed for burnishing zinc, aluminum, steel and other metals, has been introduced by Oakite Products, Inc., 132F Rector St., New York 6, N. Y.

This new compound, Oakite FM 286, works well on all metals except magnesium. It is mildly acidic and produces brilliant blue-white color on zinc die-castings. It often eliminates the need for the bright dip operation on metals which develop oxide films. Since it contains no soap, it will not leave a film.

For more data, circle 13 on colored card.

High Heat Resistant Paint

A high heat-resistant paint is announced by Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio.

Known as Heat-Rem H-170 Super, the paint is said to withstand temperatures to 1700° F. It is available in both aluminum and clear vehicles. It is claimed to be widely used on torch weld jigs on which rocket engine chambers are formed. In addition to spray application, the paint may be applied by dipping or brushing.

For more data, circle 14 on colored card.

Platecoil Unit Provides Immersion Drum Warmer

An immersion-type drum warmer, designed for standard 55-gallon drums, is announced by the Platecoil Division of Tranter Mfg., Inc., 735 E. Hazel St., Lansing, Michigan.

The immersion unit, designed for rapid heating of materials in 55-gallon drums, consists of a Platecoil heat transfer unit, rolled to the proper diameter to fit the contour of the

Heating element fits inside 55-gallon drum.

drum wall. It is available in either serpentime or header construction, with inlet and outlet connections outside of the drum.

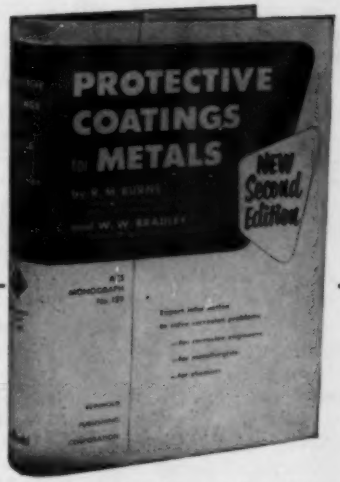
For more data, circle 15 on colored card.

Metalflake Paint Finish Used On Show Cars

Metalflake, the new "glamour" paint finish which has excited designers, stylists and customers alike since its introduction last spring, was one of the features of recent Automobile Shows.

Chrysler Corp. has utilized the new material to create an exciting and different effect on one of its show cars, a 1961 Dodge Dart.

It has been given a metallic "new look" through the application of billions of particles of precision-cut, coated aluminum foil—Metalflake—



Contains the latest information on the composition, properties, and performance of metallic and organic coatings. New chapters are devoted to inhibitors, chemical conversion coatings, and sprayed coatings. Troublesome phenomena known as "silver migration" and "metallic whiskers" are fully discussed and latest practices in metal cleaning, coating application, and coating testing are explained.

CONTENTS

Principles of Corrosion and Corrosion Control; Surface Preparation for Coatings; Types of Metallic Coatings and Methods of Application; Sprayed Metal Coating; Production and Properties of Zinc Coatings; Protective Value of Zinc Coatings; Cadmium Coatings and Their Protective Value; Tin Coatings; Nickel and Chromium Coatings; Coatings of Copper, Lead, Aluminum, Miscellaneous Metals and Alloys; Coatings of Noble and Rare Metals; Methods of Testing Metallic Coatings; Organic Coatings—Chemistry and Composition; Organic Coatings — Performance and Evaluation; Application and Use of Protective Organic Coatings; Chemical Conversion and Anodized Coatings; Special-Purpose Coatings; Corrosion Inhibitors.

640 Pages . . . Price $12.00

INDUSTRIAL FINISHING

1142 N. Meridian St., Indianapolis, Ind.

created and produced by The Dobeckmun Co., Cleveland, Ohio, a Division of The Dow Chemical Co.

The iridescent flakes, so minute they resemble grains of sand, are sprayed directly on the automobile as in the standard painting operation. This undercoat of Metalflake is then covered with several coats of tinted and/or clear acrylic lacquer to produce the vivid and radiant metallic finish.

The show car prepared by the Dodge Division utilizes silver Metalflake under a brilliant red transparent lacquer similar to the popular "candy apple" custom finish. The car's instrument panel also is finished in Metalflake, while the rest of the interior is white with pearlescent leather seats trimmed in red.

For more data, circle 16 on colored card.

"After Cooler" for Compressed Air Systems (Small)

Compressed air above 70° F. holds moisture in suspension and resists all means of separation. When cooled, however, it parts with its entrained moisture easily and automatically.

The new Murphy A4VC Aftercooler is small, efficient, easy to install, low in price, has no moving parts, and requires practically no maintenance. It is designed and built especially for the small to medium sized user.

Built for capacities of 50 to 120-cu.ft. of free air per minute, it comes in lengths from 40⅜-in. to 95¼-in. overall and the cooling chamber is only 4½-in. in diameter.

It features a non-corrosive copper coil through which the valve regulated cooling water flows. Coil is attached to the flanged head with flared connections and supported throughout its length by spaced baffle plates which direct the flow of air for utmost contact with the cooling coil. Separated moisture descends by gravity to the Murphy Ball Float Trap below where it is ejected automatically and without loss of air. A product of Jas. A. Murphy & Co., Inc., 1421 E. High St., Hamilton, Ohio.

For more data, circle 17 on colored card.

Machine Cleans Parts Used in Rockets and Missiles

A new Ransomatic cabinet-type washing machine built by the Ransohoff Co., Hamilton, Ohio, is designed to clean large tubes, cylindrical shells, and a wide variety of smaller parts used in rocket and missile production.

Parts are put through a complete cycle of automatically timed and sequenced operations which include cleaning, rust-inhibiting, and drying.

Automatic timing of all operations insures a uniform process, since the human element is not present. Timing can be varied to permit handling four to six work loads per hour.

All processing is done in a single cabinet, with the sprays walking back and forth. The solutions are returned to their respective tanks.

For more data, circle 18 on colored card.

Small Parts Vapor Degreaser

Manpro Vibra degreaser is the name of a manually operated or conveyorized degreaser designed for cleaning small metal parts.

The machine is fully enclosed and parts are spread out on the elevator trough to give 100% saturation by condensate, and individual agitation for maximum cleaning. Parts are first immersed in hot vibrating solvent at the bottom of the spiral elevator. As they travel up the elevator by vibration they are washed by a

counter flow of clean solvent. Vibration also provides continuous agitation of parts, an aid to complete cleaning. The work passes through a controlled vapor zone for final cleaning before it is discharged at the top of the spiral elevator into baskets, tote pans or onto a belt conveyor.

Capacities are determined by vibrating speeds and spiral trough widths. Variable speeds are controlled by a 12-speed selector switch. Spiral trough widths are 4, 6 and 8-in. A product of Manpro Corp., 1360 Hilton Road, Detroit 20, Mich.

For more data, circle 19 on colored card.

Solvent Vapor Recovery System

A new patented process for the recovery of usable solvent from vapors usually lost during degreasing and cleaning operations, is announced by the Industrial Division of Vic Mfg. Co., 1313 Hawthorne Ave., Minneapolis 3, Minnesota.

Thoroughly field tested on actual installations over a period of three years, Vic's new line of industrial vapor adsorbers have cut solvent costs by more than 50%, and have solved a health problem as well, by removing undesirable solvent vapors from the atmosphere of adjacent working areas.

Vic's Vapor Recovery System captures solvent vapors evaporating during degreasing and cleaning operations, by ducting them into a specially designed tank with a bed of activated carbon . . . returning clear, reusable solvent after a steaming and decantering process. Vic engineers have had the reclaimed solvent thoroughly tested by the original solvent manufacturer, and report that in all cases the solvent has been certified as "perfect for reuse." Due to the cutting of solvent costs, Vic management states, many installations have paid for themselves in less than one year of operation.

For more data, circle 20 on colored card.

Jack Adams, instructor of Binks spray painting school, shows students the correct way to hold a spray gun. The school is operated by Binks for the benefit of all industry; it is tuition-free. Persons who wish to make arrangements to attend may do so by writing Binks Mfg. Co., 3140 Carroll Ave., Chicago 12, Illinois.

Protective Film Prevents Corrosion of Metal

A new, effective, long term protective coating, known as CRC Soft-Seal, is being used to prevent corrosion of metals in production processes, in storage and in shipment. CRC Soft-Seal has an affinity for metal. It penetrates grain boundaries, cracks and pores to form a continuous protective film from one to 8 microns thick. This product eliminates the use of tenacious coatings and is applied by spray or immersion.

CRC Soft-Seal is equally effective on iron, steel, aluminum, magnesium and plated finishes, and many other surfaces. The length of time Soft-Seal remains effective varies with the conditions of exposure. It may last less than a year or more than five years. It never becomes dry, hard or brittle. It is harmless to painted sur-

faces and is easily removed with live steam or solvents.

CRC Soft-Seal is available in 16-oz. aerosol cans, and in 1, 5 and 55-gallon containers. A product of Corrosion Reaction Consultants, 116 Chestnut St., Philadelphia 6, Pennsylvania.

For more data, circle 21 on colored card.

Color Coatings on All Metals

A new chemical surface treating process that color coats all types of metals in a single treatment, is now ready for commercial application, according to Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa. Called the Hinac Process, the new coating is produced in several grades, clear and colored, which are corrosion resistant, have good weathering properties and are color fast. The process combines ease of application with good corrosion resistance at economical cost.

Hinac coatings are applied in aqueous solution at room temperatures. A low viscosity solution which covers completely, drips free quickly with virtually no carry over, Hinac can be applied by roller coating, dip or spray. The only pre-treatment required is thorough cleaning and rinsing, as would be done in any finishing system. Curing time can be as little as a few seconds, depending on the heat source.

For more data, circle 22 on colored card.

Flame-Proof Flocking Adhesive

Java-Flok, a new flame-resistant flocking adhesive for decorating toys, novelties, displays, artificial flowers, plaster ornaments, natural wood branches and other materials has been developed by Java Latex & Chemical Corp., 1713 W. Farms Road, New York 60, N. Y. Java-Flok will adhere such materials as cotton, wood and synthetic fiber flock; glitter and flitter; plastic, glass, wood and styrofoam beads, and plastic petals. A flame put to an object decorated with it will be self-extinguishing!

Java-Flok is a white water-based adhesive which may be applied by brush, spray or dipping to the object being decorated. The coated object can then be dipped, sprayed or sprinkled with flock or other decor. The adhesive dries rapidly, to speed production, forming a permanently flexible bond that will not become brittle or lose its adherence with age. If desirable, Java-Flok can be colored to conform in color to the object being decorated.

For more data, circle 23 on colored card.

Black Oxide Finish on Steel

The Mitchell-Bradford Chemical Co., Milford, Conn., has been granted a U. S. Patent on its new "Activated" Black Magic for producing a black oxide finish on steel. This new "Activated" Black Magic is the latest development in the line of blackening processes; it is a step forward in black oxide processing.

For more data, circle 24 on colored card.

Paint Finishing Bulletin Offered Free

J. O. Ross Engineering, a Division of Midland-Ross Corp., now has available free on request, a 12-page, 8½x11-in. bulletin describing Ross complete paint finishing systems, and component units.

The 2-color bulletin, PF-400 includes a pictorial story of the finishing line—pictures, descriptions and technical data of the individual component parts, construction and conveyors.

Also, there is a section on the Ross Waldron Strip Coating Line, Metal Decorating Units, and the laboratory facilities at Ross.

Write for this free literature to J. O. Ross Engineering, a Division of Midland-Ross Corp., 730 Third Ave., New York 17.

For more data, circle 25 on colored card.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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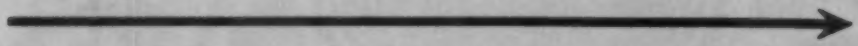
FOR A QUICK RUN-DOWN

On what's the latest in organic finishing operations, read all of the following items about new materials, equipment and services offered by advertisers in this issue.



Industrial FINISHING

February, 1961, Issue

READER SERVICE DEPARTMENT

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What Manufacturers Offer--Literature, Materials, Equipment, Supplies, Services

Please Mark Returned Cards Correctly

Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly, including your name and address. Thank you.—*Editor.*

Melaqua 600 is water-soluble, hard, solvent-resistant, colorful and non-inflammable. Melamine resin makes Melaqua hard and solvent-resistant and is combined with an acrylic polymer for color, high gloss and weather resistance. Melaqua can be the vehicle for a baking enamel with good characteristics of both the emulsion system and water-soluble system. American Cyanamid Co., Plastics & Resins Divn., 30 Rockefeller Plaza, New York 20, N. Y.

For more data, circle 26 on colored card.

Thickness Measurements and paint hiding power can be quickly and accurately determined with the Pfund cryptometer and the Pfund paint film gage. A descriptive folder on these instruments is available. Koehler Instrument Co., Inc., 168-56 Dougias Ave., Jamaica 33, New York.

For more data, circle 27 on colored card.

"Spax" Multicolor One-Coat Finish by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill., provides a combination of two or more harmonizing colors in one coat with standard spray equipment. For finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Hides surface irregularities. Color card available.

For more data, circle 28 on colored card.

Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago 14, Illinois.

For more data, circle 29 on colored card.

Roller Coating Finishes for blind stock is a specialty of Cosden Paint Co., Beverly, N. J. Roller coat finishes must have good adhesion, formability, durability, beauty and absolutely trouble-free application at high speeds. Cosden one-coat roller coating enamels and vinyls give protection to the slats and roll-formed parts.

For more data, circle 30 on colored card.

Complete Plywood Finishing System offered by The O'Brien Corporation, South Bend 21, Ind. The system authentically reproduces any expensive or exotic wood grain or pattern, in any color, by upgrading low-cost, readily available plywood. The complete process includes O'Brien fillers, groundcoats, graining inks and topcoats.

For more data, circle 31 on colored card.

"Prep" Products for Phosphating, cleaning, conversion coating, paint bonding, metal conditioning and rust removing are available from Neilson Chemical Co., 2306 Gainsboro, Detroit 20 (Ferndale), Mich. "Prep" Products are available for steel, aluminum, zinc, cadmium, etc. Write, outlining your needs, and recommendations will be made.

For more data, circle 32 on colored card.

Burkle Flow-Coater applies lacquers, enamels, varnishes, polyester resins, etc., with uniformity, automatically. Can be used on flat, curved, fluted, convex or concave surfaces of wood, metal, plastic, paper and canvas. Illustrated brochure available. Joyce Research and Development Corp., 249 W. Merrick Rd., Valley Stream, New York.

For more data, circle 33 on colored card.

New, Enlarged 2nd Edition

THE NEW enlarged second edition of George A. Soderberg's excellent fast-selling book, "Finishing Materials and Methods" is now ready. It contains 382 beautifully printed pages 6x9-in., 225 illustrations, and is divided into 36 chapters. In the last 12 pages, all subjects in the book are alphabetically indexed. The book is substantially and attractively bound with the front cover design printed in three colors—light blue, black and red.

The first 24 chapters, all illustrated, take up materials—everything used in finishing—paints, varnishes, enamels, lacquers, synthetics, shellac, stains, fillers, bleaches, multicolor finishes, hammer-effect and wrinkle materials, luminescent paints, wax, polish, flock, tack cloth, tape, abrasive paper, varnish remover, etc.

The remaining chapters, also well illustrated, take up all finishing methods, for example, dipping, spraying, flow coating, roller coating, tumbling, electrostatic and drying. One chapter deals with the important subject of color; another offers "Safe and Recommended Practices in the Finishing Department."

Price $5.00—Money Back Guarantee

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

Guardsman Furniture Finishes by Grand Rapids Varnish Corp., Grand Rapids 2, Mich., add beauty and stability to your furniture line. Let a Guardsman salesman help you select the proper finish for your product.

For more data, circle 34 on colored card.

Drum Upender No. 32 for upending heavy drums, takes the strain and effort out of handling drums of paint, etc. Size and shape of upender spreads lifting pressure over large area to prevent drum damage. Morse Mfg. Co., 763 W. Manlius St., East Syracuse, New York.

For more data, circle 35 on colored card.

New Electric Sander by Sundstrand Machine Tool, Belvidere, Ill., with single-phase motor drive has no belts or gears to wear out, has lifetime lubricated bearings to help reduce maintenance and is sturdy built. Bulletin OE-900 gives complete information on this new sander.

For more data, circle 36 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Illinois.

For more data, circle 37 on colored card.

Hot Airless Spray System by Nordson Corporation, Amherst, Ohio, is said to cut paint waste by old-fashioned spray systems 25% or more. No air is used for atomization so overspray is cut to a bare minimum. Send for the Nordson brochure, free.

For more data, circle 38 on colored card.

Steinemann Pressure Curtain Coater applies all finishes uniformly to practically any size or shape of product. There is no waste; unused material is recovered by a recirculating system. For additional information write Wilco Machine Works, Inc., Municipal Airport, P. O. Box 3722 Z, Memphis 14, Tennessee.

For more data, circle 39 on colored card.

Industrial Finishes, specially formulated for your production line and products, give your products a salable appearance. For a perfect protective and decorative finish for your purpose, consult the Rockford Varnish Co., Rockford, Illinois.

For more data, circle 40 on colored card.

Automatic Viscosity Control for spraying, flow coating and dipping improves quality of painting and finishing by providing continuous uniformity of paint material. Norcross Corp., 247 Newtonville Ave., Newton 58, Massachusetts.

For more data, circle 41 on colored card.

Paint Overspray can be reprocessed in our plant to conform to its original specification in physical and chemical properties. Paint waste overspray or paint sludge can be used again in regular production at considerable savings. Mixed color sludges can be converted to primers. W. C. Richards Co., 3108 W. Vermont St., Blue Island, Illinois.

For more data, circle 42 on colored card.

"Polymac" Pure Polyester Finish is a burn-proof durable low-cost finish. Can be sprayed or curtain-coated; is print free in 50 minutes. Can be rubbed to mirror-gloss, semi-gloss or dull sheen and has glass-like hardness. Can stand severe usage. Polymac finished panels will be sent on request. Lawrence-McFadden Co., 7430 State Road, Philadelphia 36, Penna.

For more data, circle 43 on colored card.

Hardex Clear Lacquers for Brass give high gloss and can be applied by spray or dip; air dry to bake hardness; have good adhesion to polished brass; will not blush nor discolor, remains flexible. Hardex lacquers are made for all metal surfaces. New England Coating Works, Inc., 349 Bryant Ave., New York 59, N. Y.

For more data, circle 44 on colored card.

Paint Strainers for straining lacquers, enamels, paints or varnishes. Made of heavy paper stock with cloth inserts in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.

For more data, circle 45 on colored card.

"RediRay" Modular Infrared Ovens fit any finishing system. Provide uniform heat with no hot spots; high efficiency with no bulbs, tubes or reflectors to get dirty, burn out or break; complete flexibility, adaptable to any conveyor system. Engineering Data Sheet No. 112 describes RediRay and its applications. Infra-Red Systems, Inc., 240 Rt. 23, Riverdale, N. J.

For more data, circle 46 on colored card.

AN AMAZING CASE HISTORY REPORT!

GRIPALLOY scores again by reducing costs and improving quality

GROWING pains caused Company X*, a manufacturer of air conditioning louvres and vents, to build a new plant and adopt new manufacturing methods. Objective: Speed up production, increase adhesion, improve quality and reduce costs.

FABRICATION: Aluminum spinnings and stampings. Chemical treatment was considered and rejected. Reason: Cost of installation, space required for tanks and time lag.

GRIPALLOY** was competively torture-tested and came out on top. Why? Because all that was needed was vapor degreasing, a dip into GRIPALLOY, a flash 5 min. air dry and then a spray coat of Metallic Bake Enamel. Both coats were then baked together for 10 minutes at 310° F. Results: The finish looks better, is tougher, has greater adhesion because of the metal etching characteristic of GRIPALLOY, and a marked improvement in over-all quality.

CONCLUSION: GRIPALLOY cut pretreatment costs in half, and it now takes only 35 min. from hanging to the unloading and packing area.

Investigate GRIPALLOY now. Let our technicians show you how to save money on your finishing costs. It will cost you nothing!

*Name on request. **Registered.

TENAX

Lacquers — Enamels — Synthetics — Vinyls

FINISHING PRODUCTS COMPANY

390 ADAMS STREET, NEWARK 5, NEW JERSEY

For more data, circle 207 on colored card.

Detrex 910 Chemically Cleans and Phosphate Coats in one operation. Is designed for use in continuous mechanical spray washing equipment ranging from a two to a six stage operation. Used in practically all areas of the United States without special pH control. Detrex Chemical Industries, Inc., P. O. Box 501, Detroit 32, Michigan.

For more data, circle 47 on colored card.

"Flex-A-Foam" Dust Masks are form-fitting in design, attractive styling and good filtering efficiency. Masks are feather-like in weight and give easy-breathing comfort. Mask contains only four long-wearing, inter-locking parts, all washable. Pure latex filter outwears throw-away type. Flexo Products, Inc., Westlake, O.

For more data, circle 48 on colored card.

Metal Coatings for your standard requirements or for the solution to a unique problem, can be formulated in the modern research laboratories of Gordon Bartels Co., 2600 Harrison Ave., Rockford, Ill. Bartels Metal Decorating coatings have the consistent order-to-order uniformity. For metal decorating problems consult Gordon Bartels.

For more data, circle 49 on colored card.

IDEAL TACK RAGS FOR A PERFECT FINISH

Bulk, Bagged and Rolls

IDEAL CHEMICAL COMPANY

1499 Dean Drive South Euclid 21, Ohio

For more data, circle 238 on colored card.

Turco "Paintite" is the new phosphating coating that requires only three stages by dip or spray washing. Gives excellent cleaning, is low foaming, gives uniform coating, etc. Phosphating Reference Chart and full details on Paintite are available upon request. Turco Products, Inc., 24600 S. Main St., Wilmington, Calif.

For more data, circle 50 on colored card.

Natural and Synthetic Pearl finishes in air dry or bake coatings for a variety of products, are offered by Rona Pearl Corp., E. 21st & E. 22nd St., Bayonne, New Jersey. Apply to metal, plastic, wood or glass surfaces.

For more data, circle 51 on colored card.

Burn-in Tools for making quick and skilful repairs to nicked, dented or scratched finishes. The Op-Al Electric & Mfg. Co., 3133 Martindale Ave., Indianapolis 5, Ind.

For more data, circle 52 on colored card.

"Catalan" is the catalyst finish in either gloss or satin finish. Is tough, mar-resistant and waterproof; in clear and colors. Saves on baking cost and on forced air-drying time. Consult our laboratory staff technicians for advice on any finishing problem. J. Landau & Co., Inc., Carlstadt, New Jersey.

For more data, circle 53 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an air tight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H .S. Cover, P. O. Box 2508, South Bend 14, Indiana.

For more data, circle 54 on colored card.

PROTECT LUNGS *against* PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only $2.00 postpaid. Order Now!

H. S. COVER CO., Dept. 210, South Bend 14, Ind.

For more data, circle 208 on colored card.

Pyroxcote Lacquer for whites, off-whites and pastel colors has good light fastness and resistance to change of color or darkening with age. Works on any wood, composition or metal surface. Available only as an air-drying product. Pyroxylin Products, Inc., 4851 S. St. Louis Ave., Chicago 32, Illinois.

For more data, circle 55 on colored card.

Conveyorized Finishing Systems are flexible, cut labor costs, use less floor space, increase production, give less fatigue for labor and are economical. Finishing systems can be engineered for wood and metal products. A Koch finishing engineer will make recommendations without obligation. George Koch Sons, Inc., Evansville 4, Indiana.

For more data, circle 56 on colored card.

"Hammermark" Finishes are available in colors and have the function of hiding imperfections. Are impervious to duplicating inks, cleaning and office chemicals, are mar-proof. Available in bake and air-dry and in all pearlescent colors and shades. Sample panel available. Advise method of application. United Lacquer Mfg. Corp., Linden, N. J.

For more data, circle 57 on colored card.

Kinetic-Kurtain Coater by Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill., helps improve finish, save material and increase production. Coater provides a precisely metered gravity curtain of material that gives an ultra-smooth coating film deposit at high speeds. Many standard paints and finishes can be applied. Booklet gives details, specifications and recommendations.

For more data, circle 58 on colored card.

Industrial Finishes for farm machinery, road equipment, etc., which is exposed to the weather, chemicals, elements, etc., are formulated to meet these problems by Gilman Paint & Varnish Co., Industrial Divn., Chattanooga, Tennessee.

For more data, circle 59 on colored card.

"Bull Dog Shaker," Model 4, conditions paint to brushing consistency in one to 5-gal. cans, without opening the can. Time required is from two to 30 minutes, depending on paint formulation and length of time paint has been on the shelf. Easy to operate. Grenier & Co., Inc., 13142 Rexford St., Blue Island, Ill.

For more data, circle 60 on colored card.

"Pearl Glo" Synthetic Pearl Pigment can be sprayed or dipped on any sealed surface of plastic, metal, wood, leather, paper, etc. Can also be incorporated into acrylics, polyester, vinyl, etc. Gives a pearl finish at low cost. Sample available. Specify application and choice of vehicle. Argenta Products Co., 74-80 Forrest St., Jersey City, New Jersey.

For more data, circle 61 on colored card.

Long Ring Minute Minder efficiently times industrial finishing processes. Can be set from one minute to one hour. Long ring tells when time is up. Special volume order prices available. The Lux Clock Mfg. Co., Inc., Waterbury 20, Conn.

For more data, circle 62 on colored card.

"TOMORROW'S Products Tested TODAY"
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A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE, INC.
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For more data, circle 239 on colored card.

Color Planning

for business and industry...

How to use color effectively, economically and profitably in your factory, office, products, packaging, displays, stores, advertising, home—everywhere. This information is presented in easy-to-read style by a man who has been a color specialist for 30 years, Mr. Howard Ketcham.

A few of the subject divisions in the book: How to plan the colors for your product, color for better marketability, new color in place of new design, how many colors, hints on color and design, where does product color go from here, color and safety, some easy rules to follow, what color can do for you, which type of light, how camouflage works, the uses of color through the ages, etc.

As Director of the Color Advisory Service of the DuPont Co. back in 1932, Mr. Ketcham created the original Duco automobile colors, and his color plans were featured in more than 70% of U. S. automobiles. He also introduced the first market testing procedures for predetermining consumer color preferences. After World War II he color-designed everything from packages, products and trademarks to homes, stores, trucks, railroad cars and even jets. In three years alone, A. T. & T. sold 10 million of his colored telephones, and U. S. Steel hired him to modernize and reduce (from 40 to 9) its color line which contributed to the company's 40% increase in sales that year.

The book contains 282 pages, including 8 color plates, 6¼x9½-in., is divided into 19 chapters, contains an alphabetical index and table of contents, and is substantially bound in heavy stiff covers of black and light blue letters in red and gold. To leaf through this remarkable book you would estimate it to cost at least ten dollars, but actually the retail price is only $5.95, postpaid.

INDUSTRIAL FINISHING

1142 N. Meridian Street Indianapolis 4, Ind.

"driQuick" Infra-Red Ovens have no bulbs or sockets to burn out; temperature can be set to within 1 degree of heat desired; maintenance costs are at a minimum. Can be used on products of wood, plywood, hardboard, etc. Field test equipment available to show you what can be done with your product and finishes. Dry Clime Lamp Corp., Greensburg, Indiana.

For more data, circle 63 on colored card.

Aerosol Finishes — custom-loaded by Sprayon—never vary in color or performance, as they are tested and proved in Sprayon's quality-control laboratory where paint chemists and paint technicians make sure of this fact. All test data, materials and samples are dated, coded and filed for future reference. Sprayon Products, Inc., 2605 E. 65th St., Cleveland 3, Ohio.

For more data, circle 64 on colored card.

Multi-Color Wood Grain printing reproduces the world's selected wood grains. These grains can be reproduced on the close-register Hamant DV-27 Production Graining Machine. Prints in two colors over a third (ground) color. Gives a natural appearance which cannot be duplicated by ordinary methods. Can print assembled work up to 40-in. high. The Hamant Tool Co., Inc., 302 Warren St., Dayton 9, Ohio.

For more data, circle 65 on colored card.

BFC Chromic Acid (flake) is available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery from factory and nearby distributor stocks.

For more data, circle 66 on colored card.

Interiox Line of cleaning materials includes a product for every need, whether spray or immersion type cleaner is used, single or multiple-stage. Interiox baths are long-lived and require less additions and control. Northwest Chemical Co., 9310 Roselawn, Detroit 4, Michigan.

For more data, circle 67 on colored card.

Hi-Sol Enamel Reducer offers substantial savings in ready-to-spray paint costs. In addition, sagging is practically eliminated and a smoother, better looking finish obtained. Potter Paint Company, Cortland 1, New York and Cambridge City 1, Ind.

For more data, circle 68 on colored card.

"Electro-Cold Stripper" will strip vinyls, alkyds, japans, hammers, primers, wrinkles, enamels and epons in minutes. Is non-flammable, requires no heat or current. Complete data and testing sample free on request. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12.

For more data, circle 69 on colored card.

Barcotone Multicolor is resistant to wear, scuffing and chipping. A selective arrangement of 24 color combinations to suit any motif are available. Marine grade for boat interiors and outdoor use, as well as coatings for fixtures, displays, novelties, etc., are obtainable. Barrett Varnish Co., 1532 S. 50th Court, Cicero 50, Illinois.

For more data, circle 70 on colored card.

Finishes Consultant, with no supplier affiliations, can give you a 4-day "consulting package." Complete process analysis with detailed equipment specifications can be given. E. A. Zahn, 3502 Hillsboro Court, Louisville 7, Kentucky.

For more data, circle 71 on colored card.

Tack Rags for use prior to painting, to wipe off and hold dust and dirt particles too small to see, but which might leave a blemish on the final coat of paint or finish, are available from Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, O.

For more data, circle 72 on colored card.

Gold, Copper and Aluminum are now available in Cres-Lite brilliant, metallic bronze powders. Color card showing the 44 colors now available is free upon request. Special or matched colors can be made. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Illinois.

For more data, circle 73 on colored card.

Gyromat Directional, Centrifugal, electrostatic spray systems can be installed on your existing conveyor line with no major changes. Centrifugal force is used to atomize and direct the coating material instead of air and there is no expanded air to require high velocity exhausts. Recessed areas, corners, etc., not otherwise possible, handled with ease by Gyromat. Has very high speed coverage. The Gyromat Corp., Kings Highway Cut-Off, Fairfield, Connecticut.

For more data, circle 74 on colored card.

Wood Lacquers and clear and shaded synthetic coatings, texture enamels, aircraft finishes, clear metal finishes, thinners, dopes and chemical coatings are just a few of the many coatings by Randolph Products Co., Carlstadt, N. J.

For more data, circle 75 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.

For more data, circle 76 on colored card.

For more data, circle 240 on colored card.

RECOVER your Paint Overspray

• REPROCESSED in our plant to conform to its original specification, in both physical and chemical properties, paint waste overspray or sludge can be used again in regular production at considerable savings. Our more than 21 years' experience is customers' guarantee of satisfaction.

PRIMERS—WHITES—COLORS—

• Write for complete details!

Mixed color sludges can be converted to primers.

W. C. RICHARDS CO., 3108 W. Vermont St., Blue Island, Ill.
California Plant: 401 Julianna, Anaheim, Cal.

For more data, circle 209 on colored card.

Drawer-Glide Waxes, color or colorless, penetrate deep into pores of the wood thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. Drawer Glide Waxes also beautify the wood and give surfaces a smooth, waxy feel. The Prillaman Co., P. O. Box 1024, Martinsville, Virginia.

For more data, circle 77 on colored card.

Sun Ray No. 0000 Steel Wool is surpassingly soft, the finest grade anyone can make. A rubdown with its resilient strands imparts a rich, mellow smoothness to all fine furniture. Sun Ray steel wool is made in a variety of forms and grades for every job; layer built pads, rolls, reels and bulk pound tubes. Write on your letterhead for a free generous sample. The Williams Co., London, Ohio.

For more data, circle 78 on colored card.

Biascosolv Degreasing Solvent can be used on all metals, ferrous and nonferrous or combinations of both. Biacosolv eliminates sludging, keeps heating surfaces clean and efficient; remains stable after repeated distillation. Equipment, solvents and complete field service are available from G. S. Blakeslee & Co., 1844 S. Laramie Ave., Chicago 50, Illinois.

For more data, circle 79 on colored card.

Exposure Test. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, Inc., 4301 N. W. 7th St., Miami 34, Fla.

For more data, circle 80 on colored card.

"Polyfax" Process gives true reproduction of the most delicate wood grains, leather or fabric textures and even patterns or designs of your own creations. Can be used on wood, plastic, steel and composition board. "The Key to Distinctive Styling" is a free booklet that tells how Polyfax can be used in your production line. Interchemical Corp., Finishes Divn., 224 McWhorter St., Newark 5, New Jersey.

For more data, circle 81 on colored card.

Agateen Ponetic No. 1 bakes hard at 300° F. in five to ten minutes. Bakes to a flexible, durable attractive coating. Agate Lacquer Mfg. Co., Inc., 11-13 43rd Road, Long Island City, New York.

For more data, circle 82 on colored card.

Reverse Roll Coater for eliminating imperfections in hardboard panels and other material, is available from Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky. Machines are heavily and accurately built and are obtainable in two sizes for 36-in. and 48-in. panels, any length, and up to 2-in. thick. Other wood graining machines are also available.

For more data, circle 83 on colored card.

"H-Gun" by Spee-Flo, combined with Spee-Flo HydraAirless 20 system produces a spray pattern equal to the best air-atomized gun, and without overspray. Controlled film thickness from ½ to 3 mils or more can be applied with the HydraAirless 20 and the new H-Gun. An unheated system will now produce the results formerly requiring a heated system. Heated system is also offered. The Spee-Flo Co., 6614 Harrisburg Blvd., Houston 11, Texas.

For more data, circle 84 on colored card.

Fast Strippers, Lea "Coldstrip" and "Synstrip" are clean working and noncorroding. These strippers break the bond between metal and organic coating; do not dissolve lacquer or enamel. Complete technical information available. The Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Connecticut.

For more data, circle 85 on colored card.

Curtain Coating Materials by Snyder Brothers Co., P. O. Box 631, Toccoa, Ga., are being used successfully on both foreign and domestic machines. Curtain coating know-how enables Snyder to formulate to your needs.

For more data, circle 86 on colored card.

Masks and Mask Washing Machines, automatic painting machines, mechanical and air operated clamps and pressure fixtures for holding parts and masks, are some of the equipment sold by Conforming Matrix Corp., 830 New York Ave., Toledo 11, Ohio.

For more data, circle 87 on colored card.

Complete Paint Finishing System from metal cleaning through dry-off on to flow coating, into solvent vapor enclosure, to flash off, prime coat bake oven to finish coat bake oven into cool and inspection can be engineered and installed by J. O. Ross Engineering, 730 Third Ave., New York 17, N. Y. Paint Finishing Bulletin No. IF401 is available upon request.

For more data, circle 88 on colored card.

Air Compressors that deliver clean, dry air with fewer starts and stops—air that's free of moisture and sediment, are available from The DeVilbiss Co., Toledo 1, Ohio. Compressors range in size from ¼-hp. through 25-hp. Complete information available.

For more data, circle 89 on colored card.

Finishing Specialists are at your service to serve you whether your problem is run-of-the-mill or real tough. Next time you have a finishing decision to make call on Egyptian experience and "know-manship." The Egyptian Lacquer Mfg. Co., Box 444, Newark 1, New Jersey.

For more data, circle 90 on colored card.

Airless Spray Unit, in the new utility model cuts cost of applying paints and other industrial finishes. The Dyna-Spray System has no atomizing air and no material heating is needed. Paint is supplied direct from container. Applies an even coating and reduces overspray and bounceback. Lincoln Engineering Co., 4019 Goodfellow Blvd., IF-1, St. Louis 20.

For more data, circle 91 on colored card.

Compressed Air Filters remove all harmful traces of dirt, water and oil; goes months without maintenance. Wet scrubber cartridge causes mist to fog and form large drops that fall into sump. Dry polisher cartridge leaves the air extra clean. 60 models available. Free King filter catalog available. King Engineering Corp., 3221 S. State St., Ann Arbor, Mich.

For more data, circle 92 on colored card.

Epoxy Resin Coatings known as "Poly-Ep" protective and decorative coatings for application to metals, plastics, wood, etc., are fully described in a new technical bulletin available free of charge. D. J. Peterson Co., Inc., Box 181, Sheboygan, Wisconsin.

For more data, circle 93 on colored card.

"Rokatlac" Wood Finish has good hardness and abrasion resistance; is resistant to alcohol, water and chemicals, is non-yellowing and quick drying. Can be applied by spray, roller coating or pressure curtain equipment. Can be clear or tinted in full gloss or flat. Orelite Products Corp., Lodi, New Jersey.

For more data, circle 94 on colored card.

Perfex Satin Finishes need no rubbing. The "flat" finish has a rubbed appearance and waxed feel. Is quick setting, drying and is water and liquor proof. Available in a full range of sheens. Eliminates costly rubbing operation, yet gives a rubbed-effect finish. Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 95 on colored card.

"Spray Nozzles for Metal Cleaning and Coating" is the title of a new bulletin now available from Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois. Bulletin 106 includes spray nozzle reference chart covering every application. Copies are free.

For more data, circle 96 on colored card.

INCREASE PRODUCTION! CUT COSTS!
Your paint is factory fresh ready for use when mixed in a
MIRACLE PAINT MIXER
5 GAL. MODEL
¼ Pt. to 55 Gal. Mixers Available
Write to:
MIRACLE PAINT REJUVENATOR CO.
500 NORTH ROBERT STREET, ST. PAUL 1, MINNESOTA

For more data, circle 241 on colored card.

MORSE DRUM UPENDER No. 32

Takes the strain and effort out of upending heavy drums. Has 40" handle offset 35° for top efficiency. Hefty 1¼" hook provides clearance for largest chime. 2½" x 8" toe plate spreads lifting pressure over large area to prevent drum damage. Order Several Today!

MORSE MFG. CO., INC. 763 West Manlius St., E. Syracuse, N. Y. **$8.40** FOB

For more data, circle 210 on colored card.

SC Aromatic Solvents offer a wide variation in drying times and solvancies which give them unusual versatility in your formulations. Uniformity from initial test to production is assured because they always start with the identical crude. Each run is carefully inspected through numerous quality-control check points until delivery to your plant. Organic Solvents Handbook available. The Solvents and Chemicals Group, 2540 W. Flournoy St., Chicago 12, Illinois.

For more data, circle 97 on colored card.

Moving Belts in the Ransburg No. 2 Process, increase paint mileage and improve quality. Information on the Ransburg No. 2 Process and the No. 2 Process Electrostatic Hand Gun, which can be used in either conveyorized or non-conveyorized painting, is available. Ransburg Electro-Coating Corp., Box 23122, Indianapolis 23, Indiana.

For more data, circle 98 on colored card.

Color Uniformity Tests, Viscosity Tests, gloss tests and drying time tests can be made in the Quality Control Laboratory of The Gilbert Spruance Co., Philadelphia 34, Penna., to insure the right finishes for your product. New products are tested to determine possible future applications. Put Spruance to work for you.

For more data, circle 99 on colored card.

"Armorsol" is a workable abrasion resistant vinyl finish for the price of baked enamel. Can be used on automotive and aircraft applications, business machines, electronic, office and control equipment and thermosetting plastic parts and metal furniture. Will adhere to metal without primer, and can be applied with standard painting equipment; will not discolor. Bulletin describing "Armorsol" and sample panel available upon request. A product of John L. Armitage & Co., Newark, New Jersey.

For more data, circle 100 on colored card.

"Dulux" High-Bake Enamel resists chipping, cracking and discoloration. Can be used on metal, wood and other substrates. Can be applied by almost any method in any industry. DuPont technical service is always ready to help you develop better finishing at lower cost. E. I. duPont deNemours & Co., 2496 Nemours Bldg., Wilmington 98, Delaware.

For more data, circle 101 on colored card.

Nacromer Silver Finishes are bright; have lustre and sparkle. By applying a top coat of Nacromer over the appropriate base pigments, you get a clear lustrous silver, free of "tattle-tale grey." Nacromer may also be used to create tarnish-proof brass and bronze finishes. Nacromer is compatible with most coating vehicles and can be applied to almost any material by the usual coating methods. Revised edition of 8-page Nacreous Pigment Handbook now available. The Mearl Corp., 41 East 42nd St., New York 17.

For more data, circle 102 on colored card.

Bench Ovens with large work space, and especially adaptable to production line work on large units that require heat processing, are available from Grieve-Hendry Co., 1341 N. Elston Ave., Chicago 22, Ill. Bulletin BH-300 giving complete descriptions on ovens of various sizes and temperature ranges available upon request.

For more data, circle 103 on colored card.

Epoxy Resin Silk Screen Inks can be used on glass, ceramics, ferrous and non-ferrous metals and certain plastics; have good resistance to solvents and chemicals. ER Series Color Card and 64-page illustrated catalog, featuring "how to" application data, available upon request. The Naz-Dar Co., Dept. IF, 461 Milwaukee Ave., Chicago 10, Illinois.

For more data, circle 104 on colored card.

Static Eliminator. Simco Ionizing air guns will put an end to static woes in any finishing operation. Plastic parts are blown clean while being neutralized, so that dust, dirt and lint are completely removed and will not be reattracted. The new electronic air gun is safe and easy to use; guaranteed effective. The Simco Co., 920 Walnut St., Lansdale, Penna.

For more data, circle 105 on colored card.

"Gripalloy" Primer for 25 Metals is available in black and colors; excellent adhesion . . . and resistance to salt spray and solvents. Cuts pre-treatment costs in half. Tenax Finishing Products Co., 390 Adams St., Newark 5, N. J.

For more data, circle 106 on colored card.

Silk Screens in silk, nylon or metal cloth. Made to your specifications from your blueprint, art work or positive. More prints per screen. New method direct on screen. Jay & Jay Silk Screen Service, Box 243, Connersville, Indiana.

For more data, circle 107 on colored card.

PAINT HIDING POWER and THICKNESS MEASUREMENTS

Quickly and Accurately Determined with the PFUND CRYPTOMETER and the PFUND PAINT FILM GAGE

Write your laboratory supply house for descriptive folder or direct to...

KOEHLER INSTRUMENT COMPANY, INC., 168-56 Douglas Ave., Jamaica 33, N. Y.

For more data, circle 211 on colored card.

Chart Matches Proper Chromate Coating to Finish Desired

A new Selector Chart, which enables a metal finisher to match the proper chromate coating to the type of finish desired, is available from MacDermid Inc., Waterbury, Conn., manufacturer of metal cleaning and finishing chemicals. In addition to showing the type of finish desired, the Selector Chart indicates the color of various coatings, refers to the appropriate MacDermid data sheet number and lists the government specification number met by the company's three dry-powdered chromate conversion coatings.

For more data, circle 108 on colored card.

Synthetic Pearl Essence Book

The Mearl Corp., New York City, has issued a new, revised edition of its 8-page Nacreous Pigment Handbook. New material covering Murano Colors, Mearl's synthetic pearl essence in color, and Mearlite, a non-lead pearl pigment is included in the new edition.

As in the original version, introductory material describing natural and synthetic pearl pigments is followed by concise discussions of the important factors such as dispersion and orientation of pearl crystals, choice of pigment types, formulations for various applications, and application procedures. Also included in the latest edition is a table showing the formulation designations of the various synthetics divided into the three main categories: 1) for surface application; 2) for casting in polymerizable resins; and 3) for incorporation into plastics.

Copies of the revised Nacreous Pigment Handbook are available from The Mearl Corp., 41 E. 42nd St., New York 17.

For more data, circle 109 on colored card.

NEW METHOD DIRECT ON SCREEN

Tough Long Lasting Screens in Silk, Nylon Or Metal Cloth—Made 100% To Your Artwork—Positive—Blue Print—Negatives—Positives For Your Use. More Prints Per Screen.

Jay & Jay Silk Screen Service, Inc.

Post Office Box 243, Connersville, Indiana

Phones: 2534—2246-M—3301

For more data, circle 242 on colored card.

New Infrared Oven Catalog

A new, multi-color, 8-page folder on Fused Quartz Radiant Ovens has just been released by The Cleveland Process Corp. The folder is illustrated with photos of "on the job" applications as well as line drawings, graphs and charts.

A comprehensive price list is included. One page deals with the various applications of the Clepco Quartz Ovens. Other pages are devoted to performance data, wave lengths for proper energy distribution, etc. Various baking and curing problems with timing, for particular jobs, are given.

For a free copy of the brochure and any other information, write to The Cleveland Process Co., 1773 E. 21st St., Cleveland 14, Ohio.

For more data, circle 110 on colored card.

Plastisols and Organosols

A 2-color 24-page brochure, 8½x11-in., entitled, "Bakelite Vinyl Resins for Plastisols and Organosols," covers all aspects of formulation, processing methods and applications. It is a working manual for formulators and users of these materials. Union Carbide Plastics Co., 270 Park Ave., New York 17, N. Y.

For more data, circle 111 on colored card.

Automatic Packaging. A system for the automatic packaging of nails, which will enable American nail manufacturers to resist foreign competitors who have already seized some 40% of the domestic market, was described recently. The system is being adapted to the packaging and handling of other elongated or sharp metal objects.

A key to the system is a new corrugated paperboard carton with three plies on its bottom, and two on its four sides. The package, folded into shape from a single corrugated blank, includes a spout for pouring nails. Each time it is used, the package can be tightly closed to preserve its contents from moisture and rusting.

During the packing process, a conveyor automatically collects and weighs 50-lbs. of nails. As they fall down a chute they are aligned horizontally by powerful electromagnets. Polarity is then reversed and the nails fall ranked rather than helter-skelter into the new package.

There is no automatic price set at which you know you can sell your product if it is a good one. There are enough competitors making similar products which will do the job for the customer's purpose. If all other things, such as production and delivery time and quality are equal, the customer will take the product with the lowest price tag. To stay in business a company must keep its costs down.

Devoe & Raynolds Co. General Sales Meeting at Louisville

Evidence of confidence in the continuing growth of our economy, and of increasing sales of its paint products in particular, was afforded by the spectacular General Sales Meeting of Devoe & Raynolds Co., Inc., held in December. It was the first time that all of the Devoe Trade Sales organization met in Louisville, and it was the largest meeting of its kind ever held by this 207-year old firm.

To accommodate the more than 300 men called in from all parts of the country, Devoe arranged for the use of the Kentucky Hotel's Flag Room, plus its mezzanine and several private dining rooms.

J. K. Patterson is in Sales for Watson-Standard Co.

Joseph K. Patterson has been appointed Watson-Standard Co.'s District Sales Manager for the states of Ohio and Michigan, with headquarters in Cleveland, O. Mr. Patterson is well-known in the paint industry, having formerly been vice president of the Patterson-Sargent Co. for ten years.

Ionic Appoints British Distributor

H. R. Noble, Ltd., 236 North Circular Road, Palmers Green, N. 13, London, England, has been appointed exclusive British distributor for Ionic Electrostatic Corp., Garfield, N. J.

H. R. Noble, Ltd., will handle the entire line of Ionic Electrostatic coating equipment. This includes three basic automatic electrostatic systems employing air and high speed centrifugal atomization, adaptable to all types of conveying systems, as well as Ionic's Model 10 high speed centrifugal type electrostatic hand gun.

H. R. Noble, Ltd., will maintain a stock of Ionic eqcipment, as well as demonstration facilities.

S. E. Bacon Directs Midwest Sales for Behr-Manning

Stanley E. Bacon has been named industrial sales manager for the midwestern region, by Behr-Manning Co. of Troy, N. Y., manufacturer of coated abrasives and pressure-sensitive tapes, and a division of the Norton Co. The appointment was announced by Thomas G. Gilcoyne, Abrasives Division sales manager.

Bacon, whose headquarters will be at the firm's Chicago offices, succeeds Arthur W. Bell, regional manager for the past 12 years.

Three Executives Advanced at DuBois Chemicals, Inc.

Three new officer appointments have been approved by the Board of Directors of DuBois Chemicals, Inc., Cincinnati, O. George H. Scheper has been made Financial Vice President; Edward R. Schoener is now Assistant to the President; and Thomas E. Westerfield is Treasurer and Assistant Secretary.

George H. Scheper was formerly treasurer of the Company. He joined DuBois in 1952 and has served as controller, assistant treasurer and secretary-treasurer.

Edward R. Schoener was formerly assistant secretary and administrative assistant. In addition to his new position, he will continue to serve as assistant secretary. He joined DuBois in 1938 as a general sales correspondent, and has served in sales promotion, office management and staff administration.

Thomas E. Westerfield was formerly office manager of DuBois. He joined the company in 1951 in the accounts receivable department and has served in various credit, accounting and office management positions.

Robert Ossege, formerly cost accountant, has been named office manager.

SALESMAN WANTED.

Leading manufacturer of industrial finishes has exceptional opportunity for qualified individual to sell both wood and metal finishes. Expanding sales program offers opening in Maine, Eastern New Hampshire, Northeastern Massachusetts area where partial sales volume is already established. Practical finishing experience desirable but not necessary. Write today for further information. Submit resume of background and experience. Replies held in strict confidence.

LILLY VARNISH CO.
of Massachusetts

29 Maple St., Gardner, Mass.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

MANUFACTURERS' REPRESENTATIVE

Looking for a paint manufacturer that can supply a complete line of industrial finishes. Will supply financial and personal references. Interested in selling in the state of Wisconsin. Address IF-823, care Industrial Finishing.

FINISHING DEPARTMENT SUPERINTENDENT

Wanted for an important television cabinet factory located in Mid-West. Must be capable of running quality merchandise on schedule. Conveyorized system. Submit work history and references; replies treated in strict confidence. Address IF-824, care Industrial Finishing.

WOODWORKING SUPERINTENDENT.

Bachelor degree in Wood Technology. 10 years' experience with a leading midwest occasional furniture manufacturer. Thoroughly familiar with all phases, yard through finished product. Presently employed, but desire change. Family. Will relocate. Address IF-817, care Industrial Finishing, Indianapolis 4, Ind.

SALESMAN AVAILABLE

Twenty-five years' experience selling wood and metal production finishes and coatings. Address IF-818, care Industrial Finishing.

FINISHING FOREMAN

Age 44, with 20 years of practical experience in finishing furniture, pianos and store fixtures, desires to relocate. Would also be interested in finish sales and service. Address IF-819, care Industrial Finishing.

STAIN AND FILLER CHEMIST.

Experienced in all phases of wood finishing formulation and color matching. Top coats. Will relocate your area. Address IF-820, care Industrial Finishing.

FINISHING FOREMAN WANTED.

Chicago manufacturer, line highest quality bed room and dining room furniture, catering nationally to showrooms and interior decorators. The man we engage must be a top notch foreman, familiar with all aspects of custom as well as standard finishes. Here is an opportunity for the qualified man seeking a good income along with security. State qualifications and experience. Address IF-821, care Industrial Finishing.

WANTED—PAINT SHOP FOREMAN

To take complete charge of paint shop for leading wood cabinet manufacturer with plant located in West Virginia. Must be thoroughly experienced in application of stains and clear catalyzed synthetic coatings. Address IF-822, care Industrial Finishing.

SERVICE MAN WANTED.

Prefer foreman finisher of wood furniture plant who wishes to get into sales service work for wood furniture finishes manufacturer. Will work under Indiana salesman. PERFECTION PAINT & COLOR CO., Indianapolis 2, Indiana.

CHEMIST WANTED

With strong background in lacquer and synthetic industrial finishes to work under a Technical Director. Please give full resume with assurance that replies will be kept in confidence. Salary commensurate with experience. Insurance and hospitalization provided. Location, N.Y.C. area. Address IF-812, care Industrial Finishing.

SALESMEN WANTED

REPRESENTATIVES WANTED

Hard-hitting representatives for acknowledged leader in field—a complete line of industrial finishes. See ad page 91. Specify sales background and territory preferred. ORELITE PRODUCTS CORP., Lodi, New Jersey.

SALESMAN WANTED.

An excellent opportunity for an experienced man to sell Industrial Finishes in Philadelphia and adjoining area. A sizable number of accounts will be turned over to the right man. All replies will be kept in strict confidence. YARNALL PAINT CO., 113 Arch St., Philadelphia 6, Penna.

SALESMAN WANTED.

A hard hitting progressive industrial finishes manufacturer has an excellent opportunity for an experienced man to sell and service wood furniture manufacturers in the Southeast. He must be aggressive and a non-drinker. Salary plus commission and expenses. Give complete background in first letter. Address IF-802, care Industrial Finishing.

PAINT SALESMAN WANTED.

Old established industrial finishes company located in Newark, N. J., wants an experienced salesman with a following in this field. We are ready to turn over a sizable number of house accounts to the right man. Salary and commission. Give complete background in first letter. All replies will be kept in strict confidence. Address IF-765, care Industrial Finishing.

INDUSTRIAL FINISHES

200,000 Sales to ambitious man who commands approximately equal volume. Salary plus commission and/or Profit Sharing. This is a company of high repute in New York City area. Address IF-814, care Industrial Finishing.

ATTENTION: ALL FINISH SALESMEN.

If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes, unequalled) and are well known by volume finish users. Look at our display advertisement on page 63 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be held in strict confidence. PERFECTION PAINT & COLOR CO.

LET US "NU-IZE" YOUR ABRASIVE DISCS.

Send your coated abrasive grinding discs to us. Our reconditioning "Nu-Ize" process restores them to a high degree of efficiency—not a recoat process. Over ½-million "Nu-Ize" abrasive discs were sold last year.

We are also interested in buying your used abrasive discs. Write us for further details.

FAYETTE DISTRIBUTORS, INC.
418 W. 22nd St.
Connersville, Indiana

WANTED.

Dirty solvents and thinners. Please send samples. Have clean reclaimed solvents for sale. Modern efficient solvent recovery service. Will process for customers, material at fraction of the original cost. ACME RECLAIMING, Inc., 1915 20th Ave., Rockford, Illinois.

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letters giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

HAVE GUN—WILL SPRAY.

Established manufacturer, specialists in Custom Finishing, desires subcontract work using Automatic Spray Equipment, Cromalox and Infrared Ovens. If our facilities could be of service to you, write CUSTOM COATERS, P. O. Box 22, Dover, Ohio, or phone Dover, Ohio, 6-5664.

FOR SALE.

Grey Metal Primer, hammer and salt resistant. $3.95 value, top quality, $2.50 gal. Drums or 5-gal. pails. Free samples. Uniform. UNION CHEMICAL CORP., 410 Frelinghuysen Ave., Newark 5, New Jersey., Dept. H.

FOR SALE

NU-IZE ABRASIVE DISCS

50M 7" x ⅞ Grit 100 Type C
SAVE 60%
Also large quantities of 4", 5" & 6" x ⅞, grits 24, 36, 50, 60, 80 and 100.
Write for price list and samples.
FAYETTE DISTRIBUTORS, INC.
418 W. 22nd Street
Connersville, Indiana

BARGAINS IN FINISHING EQUIPMENT

WE CARRY A LARGE STOCK OF REBUILT USED FINISHING EQUIPMENT INCLUDING BINKS, ECLIPSE AND PAASCHE AUTOMATIC SPRAY MACHINES

SPRAY BOOTHS	CONVEYORS	PHOSPHATIZING UNITS
MIXING TANKS	FANS	CENTRIFUGAL ENAMELERS
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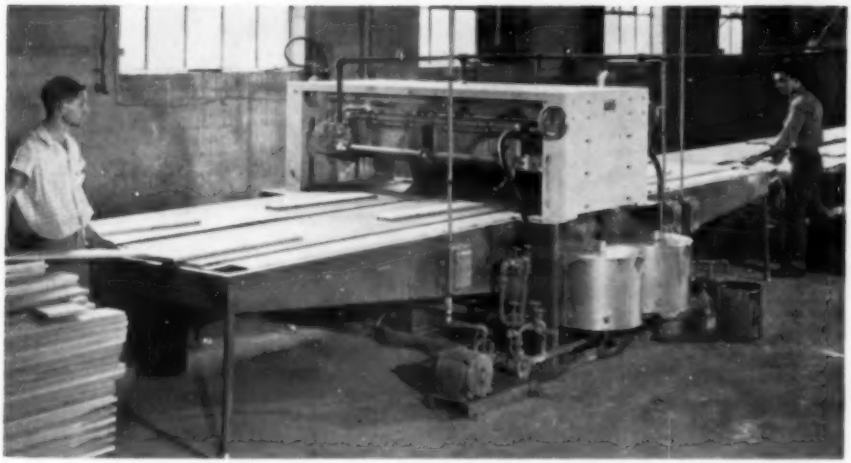

Photo courtesy of Gluck Brothers Co., Morristown, Tenn.

Our products are being used successfully on both foreign and domestic machines. This is further proof of our ability to formulate to your needs.

Snyder
BROTHERS COMPANY

Manufacturers **INDUSTRIAL** *of Quality* **FINISHES**

P. O. BOX 631 — TOCCOA, GEORGIA

is your silver finish Tattle Tale Grey?

Silver finishes should be bright. They should have lustre and sparkle. Do your silver finishes have these qualities or are they "tattle-tale grey"?

Now, you can produce a brighter silver with Nacromer. By applying a top coat of Nacromer over the appropriate base pigments, you get a clear, lustrous silver, free of "tattle-tale grey." Nacromer provides the "sterling" quality that will make your metallic finish stand out.

Used as indicated above, Nacromer may also be used to create brilliant, tarnish-proof gold, brass, and bronze finishes. It is compatible with most coating vehicles and can be applied to almost any material by the usual coating methods.

Our technical staff will be glad to guide you in the use of Nacromer for your metallic finishes. For complete information, write today. Also ask for the new, revised edition of our 8-page Nacreous Pigment Handbook—it contains important data on the use of Natural Pearl Essence and Synthetic Pearl Pigments.

Nacromer® SYNTHETIC PEARL ESSENCE MAKES CLEARER, BRIGHTER SILVERS

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